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News of the Industry Begins Page 62

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AUTOMOTIVE INDUSTRIES

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Portion of main floor viewed from balcony at 27th annual New York show

Master Craftsmanship Revealed in *1927* Cars

New York show exhibits contain more real artistry in body lines and engineering design than ever before.

By Norman G. Shidle

MORE real artistry both in engineering design and in body lines and color harmony is displayed in the 1927 automobile models than ever before. This is the dominating impression almost inevitably left on the observer viewing the 27th annual national show in progress in New York this week.

Fine cars have been built before; brilliant colors have been outstanding features of shows for several years now; refinements of fittings and performance characteristics, even in the lowest priced cars, have been noteworthy at past exhibits. But never before have the products of the industry so uniformly reflected a high standard of good taste, delightful appearance and general progress in details of mechanical construction.

It is hardly too much to say that the industry again has performed the impossible. Many times in the past have superlatives been used in utter sincerity to describe the exhibitions of the industry's handiwork at New York shows. Some editor of yesteryear, writing in *The Automobile* of the 1903 automobile show in old Madison Square Garden, began with the following sentence:

"Few were prepared to see an exhibition of such magnitude, and even the most sanguine advocates of mechanical traction on common roads could not escape surprise when the cloth was withdrawn from the statue

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on Saturday night and this new creation of the workshops stood revealed in all its unexpected glories of industrial achievement."

Now, 23 years later, the craftsmen of the industry have builded in so striking a fashion that their achievements can be described, even by the hardest-boiled of trade observers, only by the use of similar superlatives and glowing phraseology.

A vast multitude of refinements have been made in a mechanical way, although nothing startling from a purely engineering standpoint is to be noted, nor are any strikingly new trends in design exemplified by the show exhibits. From an engineering standpoint the trends in evidence for months back have merely been continued, but a great many new examples of improvements in design are in evidence.

The pre-eminent note in body coloring has changed from one of mere brilliance and striking combinations to that of subtle harmonies which combine an immediate appeal with a sound basis for lasting attractiveness.

The largest opening day crowd in many years rushed into the Grand Central Palace when the doors opened last Saturday afternoon at 2 o'clock. At 5 o'clock Saturday evening it was reported that the number of show visitors exceeded that of the opening day last year by more than 60 per cent. And the growing motorwiseness of the public was indicated by the fact that 30 minutes after the gates were let down, the entirely new models were surrounded by throngs of interested spectators. Many of the people who went to the show on the opening day quite evidently had in mind definite things which they wanted to see.

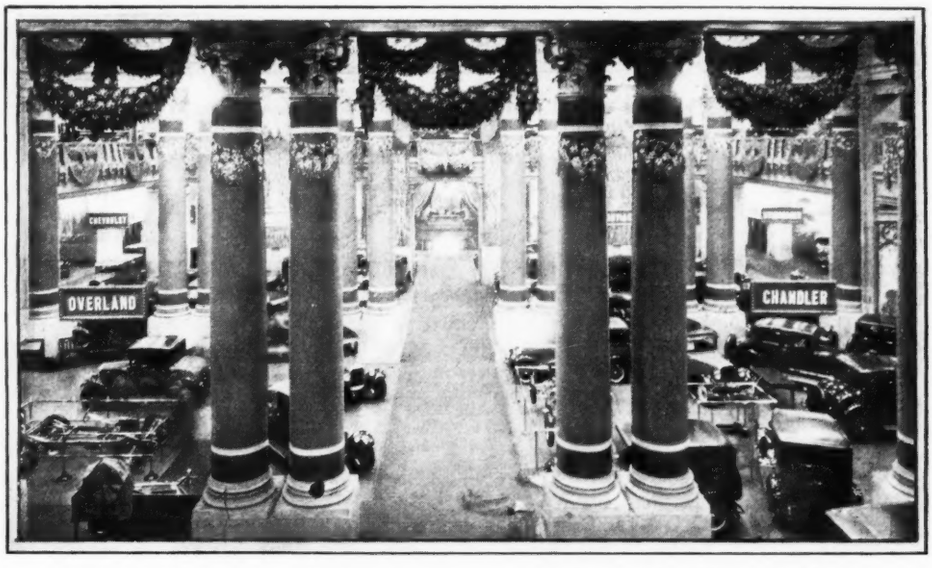
There were 215 cars and stripped chassis on view this year, shown by 44 car manufacturers. Trucks, exhibited for the first time in a New York show, were displayed by 22 makers, while four taxicabs appeared. The accessory section, which was crowded within a short time after the show opened, had 148 exhibitors, while the special shop equipment section, another entirely new show feature, had in it displays by 49 manufacturers.

The new Jordan, described by its maker as a really fine small car, was probably the most striking model exhibited concerning which no information previously has been published in *Automotive Industries*. There can be no doubt that Jordan has achieved a design which is thoroughly distinctive in appearance. Further details of this interesting model appear on later pages of this issue.

Other new models, concerning which previous information has not been made public, were the Locomobile 880, a new Kissel eight, a new Peerless six and a new Elcar model. The Falcon-Knight, product of the recently formed company associated with John Willys interests, had a private showing outside the show itself. Data about these new products also appear on later pages.

A distinct downward movement in the lowest price class was the only price trend in evidence on the opening day of the show. Following reduction by Chevrolet a week or two ago, cuts on the Chrysler four, the Star fours and sixes and the Overland Whippet were announced coincident with the beginning of the show. While difficult to determine whether or not further price revisions will be made, the indications are that no major shift is to be expected at this time. Executives of many companies making cars over the $1000 mark were firm in their statements that their companies are not contemplating any price changes at this time. Since these statements came from men associated with a number of companies somewhat dominant from a marketing standpoint, they would seem to indicate a relative stability in prices for the present.

In view of the cuts made in the lower priced cars, there was some speculation around the show as to whether or not some price activity might be expected from Ford in the near future. Executives of the low-priced car companies, however, didn't seem to be greatly concerned about the matter and seemed confident that they would continue to increase their proportion of business in this low priced field in 1927 as they have done in the last few years.



Another view of the main floor at Grand Central Palace, looking down center aisle toward front entrance

Leaders Are *Conservatively Optimistic* on Business Outlook

Manufacturers realize there are difficulties ahead but see continuance of prosperity for companies with right product and good distributing organizations.

By John C. Gourlie

THE automotive industry, judged by the expressions of its leaders at the New York show, enters 1927 with a sober realization of the difficulties ahead, but convinced that for the companies with the right products and good distributing organizations, the year will be eminently satisfactory.

Although a distinctly conservative note underlay many of the statements given by leading executives to *Automotive Industries*, the individual reactions and forecasts need to be considered against the background established by the activities of the last two years. The majority, for instance, felt that 1927 production might be somewhat under 1926, but this was not necessarily to take a pessimistic view of the outlook.

The industry has just completed two record-breaking years. Obviously it does not have to go on breaking records to maintain its general prosperity. A year ago a prediction of 4,300,000 cars and trucks production in 1926 would not have seemed particularly conservative, but now that 1926 has marked up a record of close to 4,500,000, the former figure as a forecast of 1927 output seems at first thought to be rather unfavorable, just because it would mean a drop from last year's total.

On the contrary, a production total of over 4,250,000 ought to mean a good year for the industry. It might mean bad going for some companies, but not for the majority. So long as a price war is avoided there is nothing to fear from a moderate recession in sales and production. Generally speaking the following are the unfavorable factors in the situation:

1. Poor business in the agricultural sections.
2. Low profits per unit, requiring high production for individual companies.
3. Weakening of dealers in some lines, aggravated by very heavy used-car stocks.
4. Difficulty in gaging the public taste.

On the other side of the ledger the following are recorded:

1. Continued public interest in new offerings, as evidenced by record high attendance at the show opening.
2. Sound financial condition of most of the leading companies.
3. Evidence that heaviness of dealer stocks is the outgrowth of unevenness in last year's market, and therefore perhaps only a temporary condition.
4. The fact that the high production and sales of 1926 were counterbalanced by heavy scrapping of old cars, resulting in a small net addition to cars in use.

The first three points on the debit side require little comment beyond the statements of the individual executives. The fourth point, though doubtless causing some anxious conferences, has its bright side. It may be a serious question whether, for instance, the public is going to prefer a small fine car to a larger not-so-fine car in the same price class, but at least the companies that guess right are going to be well rewarded.

The industry has never in recent years been so little standardized as to product. Every conceivable taste has been provided for, and this in itself is a strong selling point for the business as a whole; however, it may react in particular cases.

Following are expressions on the outlook by a number of executives:

H. M. Stephens, General Sales Manager, Cadillac Motor Car Co.: The industry as a whole will sell as many cars as were sold last year, but they will be sold by few companies. The officials of our company are looking for the biggest year Cadillac ever had. One of the splendid developments in the industry has been the discontinuance of unbusinesslike practices by finance companies. I would say that repossessions are negligible with those companies that insist on a 30 or 40 per cent down payment, with the balance payable in 12 months.

E. S. Jordan, President, Jordan Motor Car Co.: Stabilization of new car prices will be the principal factor in improving the used car situation. Decrease in the number of repossessions, following the general improvement of time financing practices will also be helpful in tending to keep the used car problem from becoming acute. New passenger car sales will again be healthy in 1927, but I do not look for a repetition of the 1926 record.

R. H. Grant, General Sales Manager, Chevrolet Motor Co.: Last year we produced 734,000 cars. We expect to increase this by 200,000 this year. Production for the industry as a whole, I think, however, is likely to be about the same this year as last. I look for some slight gains in export sales. Prices appear more or less stabilized. There may be small changes during the year by some makers, but nothing to get excited about. New car stocks in dealers' hands are not bulky. The used car is still the industry's greatest problem. The company that helps its dealers to sell more used cars in 1927 is the company that will increase its sales of new cars. The used car is a factory problem. If the manufacturer doesn't know how to move used cars how can he expect the dealer to know? There has been a slowing up of sales in the South as a whole, but business continues good in the industrial centers. If I were to compare the outlook for 1927 with any other previous year it would be 1923. Conditions at the present time are very similar to that period.

(Continued on page 65)

Statistical Picture of Ten New York Shows

	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927
Total exhibitors	331	198	307	307	337	356	294	297	277	267
Total car exhibitors	...	...	...	86	87	78	73	61	52	44
Total truck exhibitors	...	...	...	...	...	...	...	...	...	22
Total accessory exhibitors	252	141	225	221	250	278	221	218	214	148
Total taxicab exhibitors	...	...	...	...	...	...	...	...	...	4
Total shop equipment exhibitors	...	...	...	...	...	...	...	...	...	49
Total number passenger cars exhibited	263	225	334	341	310	283	347	262	215	215
Total number of stripped chassis exhibited	34	...	...	35	36	42	39	36	27	23
Total number trucks exhibited	...	...	...	...	...	...	...	...	...	60
Total number complete taxicabs exhibited	...	...	...	...	...	...	11	11	13	11

Passenger Car Body Styles

	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927
Open cars	175	127	176	163	158	127	117	82	41	26
2-3 passenger	40	...	. .	40	29	14	16	13	23	0
2-4 passenger (rumbles)	...	...	...	..	...	...	...	...	...	21
4-5 passenger	143	...	...	91	102	92	91	57	18	4
6-7 passenger	143	...	...	32	27	21	10	6	0	1
Closed cars	77	79	119	120	149	155	180	180	161	159
2-3 passenger	13	...	...	23	37	19	21	13	23	7
2-4 passenger (rumbles)	...	...	...	...	...	...	...	...	...	14
4-5 passenger	43	...	...	80	80	101	121	144	115	113
6-7 passenger	8	...	...	27	32	35	38	23	23	25
Convertible	...	...	...	...	...	...	...	...	...	7
2-3 passenger	...	...	...	...	...	...	...	...	...	0
2-4 passenger (rumbles)	...	...	...	...	...	...	...	...	...	4
4-5 passenger	...	...	...	...	...	...	...	...	...	3
6-7 passenger	...	...	...	...	...	...	...	...	...	0

Passenger Car Engine Characteristics

	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927
Four-cylinder	94	40	65	80	84	83	66	48	23	20
Six-cylinder	171	141	223	213	204	199	188	192	150	135
Eight-cylinder	40	34	29	31	41	37	43	58	56	60
Straight eights	...	...	...	...	...	...	...	37	43	49
V eights	...	...	...	...	...	...	...	21	13	11
Twelve-cylinder	9	8	7	3	2	1	0	0	0	0
Poppet valve	252	...	...	321	319	307	285	291	227	206
Sleeve valve	...	...	...	12	8	12	12	7	15	9
L-head	...	...	...	180	206	209	204	205	171	147
T-head	...	...	...	29	15	12	8	9	7	5
F-head	...	...	...	...	...	16	6	6	5	5
Valve in head	...	...	...	119	86	83	67	78	44	49

Passenger Car Wheels

	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927
Artillery	...	...	...	215	229	235	128	157	169	119
Wire	...	...	...	70	67	21	24	22	8	47
Disk	...	...	...	56	37	71	145	113	52	49

Four Wheel Brakes

(Number of Passenger Car Models Fitted)

	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927
Standard equipment	...	...	...	...	...	...	44	147	147	175

Census of Truck Section, 1927 New York Show

	½ Ton	¾ Ton	1 Ton	1½ Ton	2 Ton	2½ Ton	3 Ton	3½ Ton	4 Ton
Pneumatics	7	3	22	11	5	4	1	0	0
Solids	0	0	1	0	3	1	0	1	1
4 cylinders	2	2	12	6	3	1	0	0	1
6 cylinders	4	1	10	5	4	4	0	0	0
Poppet valves	6	3	22	9	6	5	1	0	1
Sleeve valves	0	0	0	2	1	0	0	0	0
Generator fitted	6	3	22	11	7	5	1	0	1
Electric trucks	1	0	1	0	1	0	0	1	0

New Bodies, With Many Refinements, Have Greater *Sales Appeal*

Manufacturers still concentrating on details designed to give greater beauty and comfort. Color replacing black for roofs and fenders. Convertible models popular.

By K. W. Stillman

THE very great influence of body design upon car sales is well evidenced by the important place it has been given during the past year in the improvement programs of manufacturers. While major improvements in engine and chassis designs have been relatively few, a great many body details have undergone alteration during the past year.

These changes have generally been designed to improve the comfort and convenience of the driver and passengers and the appearance of the car, this latter usually being in the way of giving a particular model or make a distinctive appearance to differentiate it from the other cars to be seen on the highways of the country.

In the first category—that of adding to comfort and convenience—features which have been widely adopted during the past year as indicated in the show exhibits include:

1, ventilating eaves; 2, rumble seats of coupes and roadsters operated from the front seat; 3, front seats adjustable not only for distance from the steering wheel and foot controls but with the back angle adjustable also; 4, open cars—or, rather, collapsible closed models—equipped with glass side screens which may be carried in a raised position even when the top is down; 5, remote control door handles which are within easy reach of the seat occupants; 6, increased rear treads to provide greater width for the rear seat; 7, windshields capable of being operated by means of a single control within easy reach of the driver; 8, light switch, and particularly the dimmer control, placed on or near the steering column, and indirectly lighted instrument panels.

Body Colors at the Show

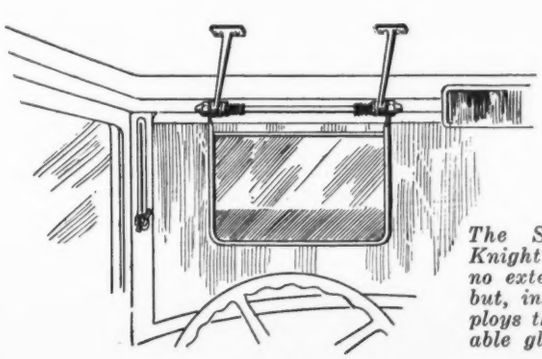
GREEN appears to be the most popular body color this year. On 68 of the cars exhibited at New York some shade of green predominated.

On 36 models the chief color was gray. Blue, on 32 models, was third.

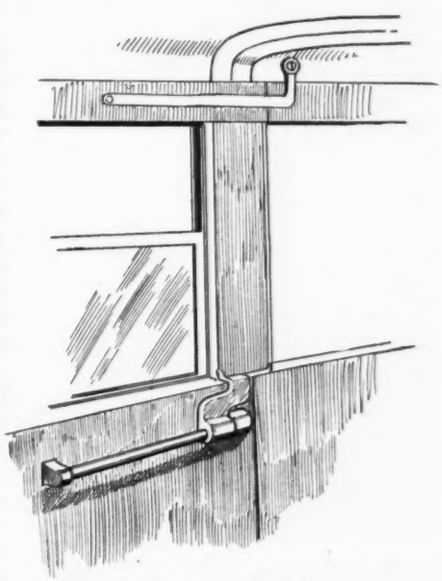
Other models were finished as follows: Tan and olive, 15; red, 13; yellow, 14; black, 9; brown, 5.

New trends noted this year which are designed to add to the appearance of the car include:

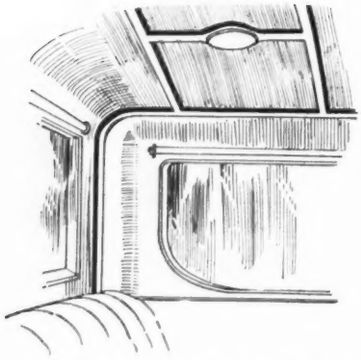
1, the use of colors on superstructures, on roofs, on window reveals, on fenders and splashers; 2, cowl bands, generally nickeled, which are used to support cowl lamps, spare tires, etc.; 3, roofs of closed models left unfinished on the under surface to furnish a beamed effect; 4, low overall height obtained by the use of worm drive, drop frames or very flat springs; 5, unconventional treatment of sun visors, some cars being without them altogether but having a small adjustable glass on the inside; 6, all-steel bodies which permit the use of very



The Stearns-Knight car has no external visor but, instead, employs this adjustable glass screen

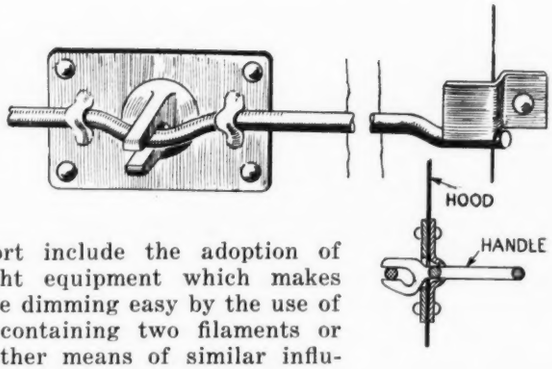


The center pillar of this Kissel collapsible sedan folds down about the rod shown in the sketch and is thus carried out of the way in the car interior



RIGHT: *Erskine hood operating mechanism by which the hood can be opened or closed in one operation with one hand*

LEFT: *This view of the roof of a Reo sedan indicates the tendency toward the use of skeleton roof effects*

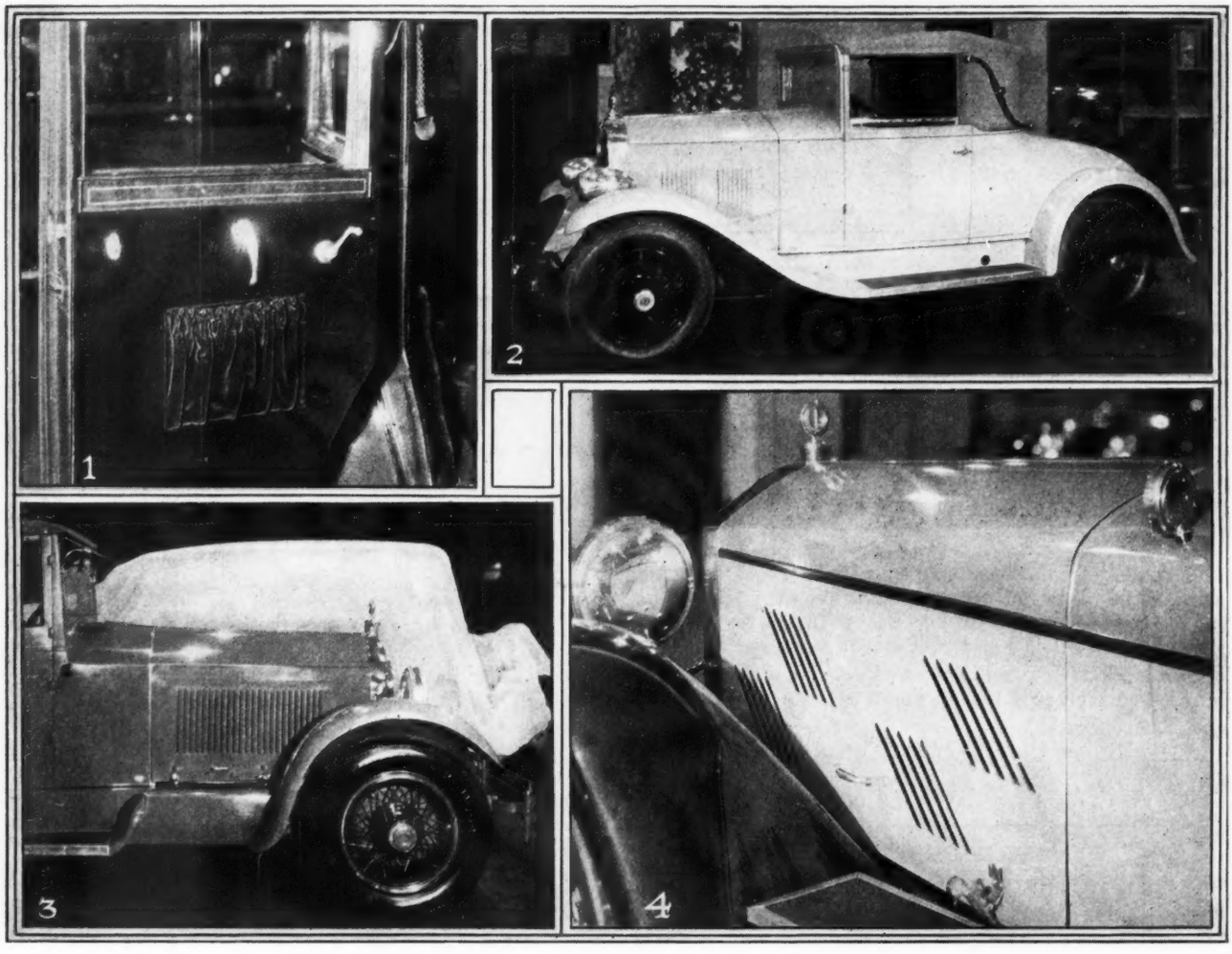


narrow pillars not only in front but throughout the car; 7, D-shaped rear quarter windows especially when landau irons are employed; 8, radiators set off by the use of bars—usually nickel-plated; 9, unconventional arrangement of hood louvres; and 10, an almost universal adoption of radiator emblems to replace the heat indicating devices formerly fitted to the radiator cap but now commonly found on the instrument board.

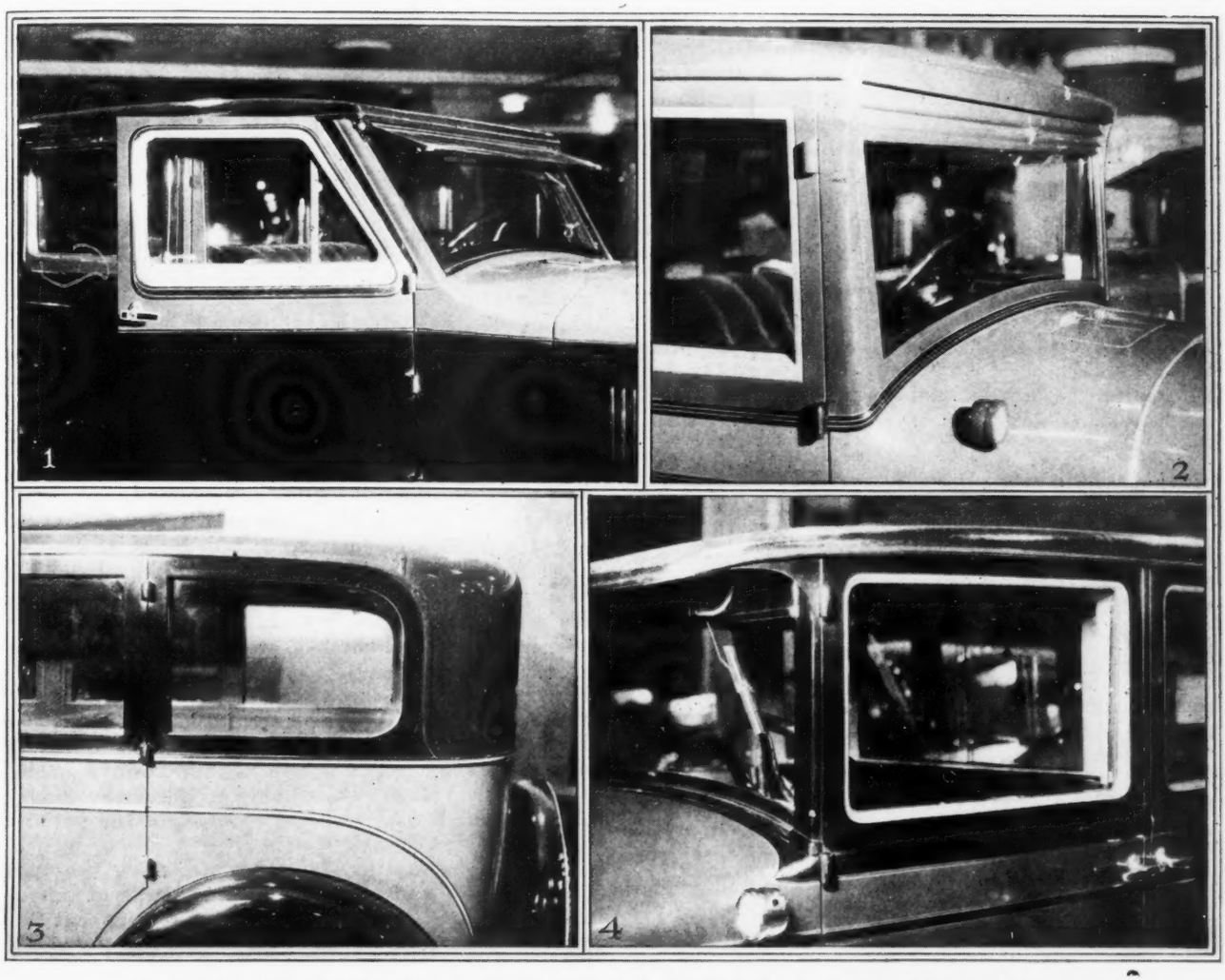
In addition to these two distinct types of improvements there are others which, while possibly not contributing directly either to comfort or appearance, undoubtedly tend to increase the value of cars so equipped in the eyes of the average buyer. Items of this sort include the adoption of headlight equipment which makes effective dimming easy by the use of lamps containing two filaments or some other means of similar influence; measures to provide greater protection against car theft, such as coincidental locks and the Fedco identification system.

The ventilating eaves similar to those shown on Stutz cars at the show last year have been adopted on several other cars such as Elcar and Moon and, of course, are for the purpose of providing fresh air for the car interior during stormy weather when, ordinarily, the windows would need to be tightly closed in order to keep out the rain.

The operation of the rumble seat from the front seat is an improvement of considerable importance to



1—The remote control door handle of this Gardner sedan indicates a popular trend. In this instance there is a separate control for locking the door although on many cars this function is performed by the handle. 2—Jordan coupe. Note the inset radiator core, grouping of louvres, abrupt front and soft top. 3—Kissel leaves a space between front fenders and running board which differentiates it from other cars. 4—Distinctive grouping of hood louvres to be found on the new Stearns-Knight cars

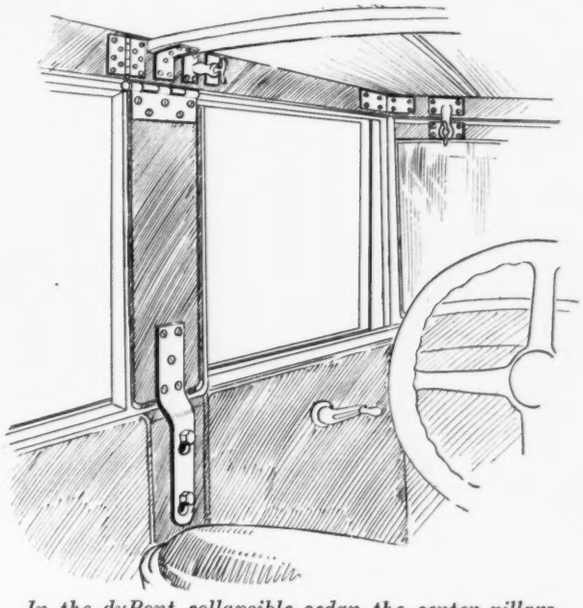


1—Velie sedan with windshield set at an acute angle, into which the door fits. Colored window reveals are typical of present practice. 2—This Nash sedan also has colored reveals and the absence of an external visor gives a distinctive appearance to the body. 3—Note the treatment of the lower molding on this Rickenbacker sedan. The use of D-shaped windows is also typical but more particularly for cars fitted with landau irons. 4—Note odd treatment of upper molding on Hupmobile, and colored window reveals

the convenience of owners of cars provided with such fitments. Instead of needing to climb out and fit a key in a rather awkwardly placed keyhole in the rear deck, the keyhole is placed in the narrow shelf just behind the front seat and the rumble seat is spring suspended so that it opens automatically when unlocked. Cars in which this convenience is provided include Hupmobile, Chrysler, Paige and the Little Marmon.

Adjustable front seats such as are provided on some models built by Hudson, Chrysler, Hupmobile and others, are a recognition of the fact that not all drivers are of the same size and it may be expected that this feature will meet with considerable approval from owners. The seats usually are placed on runners on which they may be slid back and forth through a distance of from 4 to 6 in., being fastened in position by a ratchet arrangement operated by a lever situated in front of the seat. In a few cases the back of the seat is also adjustable by means of straps which may be lengthened or shortened to alter the angle of the back.

Another feature which, like adjustable front seats, has been common European practice for several years but which has but recently been adopted by American manufacturers, is the provision of glass windscreens for cars with demountable tops. At this show there



In the duPont collapsible sedan the center pillars and top bow are hinged together and, when the top fabric has been rolled back, can be removed as a single piece and nested in place under the boot

are seven such models displayed by makers such as Chrysler, Elcar, Buick, Paige, Willys-Knight, etc.

On two-passenger models the task of demounting the top is not particularly difficult but the provision of a permanent framework for the top of four or five-passenger cars while still permitting them to be dismounted readily has, apparently, given considerable trouble to designers. There are two cars of this type displayed and in each one the main design job appears to have been the disposal of the center pillars and center top bow when the top is folded. In one car—duPont—the pillars and bow are hinged together and can be removed as a single piece after the top proper has been folded back. In a Kissel model the pillars are mounted on rods at the bottom and when the top is lowered they fold down and hang from these rods inside the car.

Remote Door Control Levers

When doors, particularly rear doors, are hinged at the back it is usually a bit inconvenient for a passenger to reach the conventional door operating lever located near the latch. This year there is evidence of a decided tendency to provide remote control levers which may be placed in the position most convenient for the passengers. Many of these controls have been designed to serve also as pull-tos so that an extra piece of hardware on the door interior is eliminated. In some designs, too, merely raising the handle locks the door.

Mono-control windshields have been fairly common in recent years but the past year has seen such a much wider adoption of them. Most designs are furnished with a crank handle which may be located anywhere along the windshield within easy reach of the driver so that the position of the windshield may be altered at will without the need for assistance or stopping the car.

In recognition of the importance of accessibility of light control switches if full benefits are to be obtained from headlamps equipped with dimming devices, this year finds nearly all such controls placed on top of the steering column, on a post extending out from the column and just below the wheel or in some other location providing equivalent facility for operation of the lights by the driver. A Chandler car has the light dimmer switch placed on the left side of the foot board.

Indirect lighting of instrument panels, together with consolidation of the instruments in a single panel, is another trend which has been in evidence for some time but seems to have reached the peak of its movement in this year's show. The indirect lighting which is usually obtained by locating the lamp behind the cut-out instrument panel eliminates all glare which sometimes made it difficult to read the instruments at night.

Color Used More Extensively

From the general appearance standpoint, colors occupy the most prominent place in the cars of this year's show, as they did last year. The variety of shades and tones employed make it very hard to allocate all the colors used to their proper places but greens are the predominating colors used in about 35 per cent of the models displayed while grays and blues vie for second place with something like 15 per cent of the total each.

Not only is there a very wide range of colors employed on the cars but they are used more extensively than ever before. Many cars have no black on them at all—the tops, fenders and all such parts being finished either in the same color as other parts of the body or in a harmonizing color. In fact, black seems so out of place that the few cars on display which have black as their basic color become quite distinctive in contrast with the brilliant hues surrounding them.

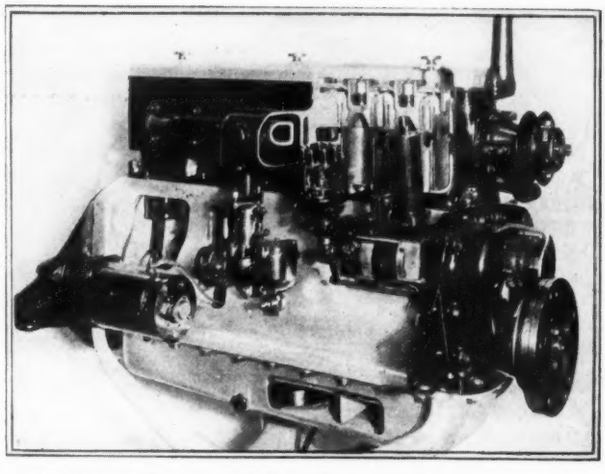
Belts and double moldings are still in common use although individual treatment of them varies considerably. Some makers employ the one-time conventional method of extending the lower molding across the hood to the radiator and ending the upper molding at the windshield. Other designers have ended both moldings at the windshield, introduced curves and angles into the conventional straightline effect, eliminated all molding from the rear and have adopted numerous other devices to lend an air of individuality to the car.

The use of skeleton roofs, first noticed at the latest Salon, has already been adopted by several large producers such as Reo and Franklin. In this design the roof bows are finished but are not covered, thus giving a beamed ceiling effect. A soft top is generally used over the framework in order to prevent drumming.

Most makers are still trying to bring their cars nearer to the ground and with such success that there are a number of cars of various makes over which a man of average height has little difficulty in looking without standing on tiptoe. This lowness has been achieved by one of three ways or by a combination of them. The Stutz, Stearns-Knight and Jordan achieve lowness principally through the use of worm-drive rear axles. Gardner, Willys-Knight and others employ a double drop frame, while Chrysler and Kissel, among others, make use of very flat springs for the purpose of reducing frame height.

Another interesting development during the past year has been the relatively wide adoption of unconventional hood louvre designs. A year ago but two or three makers were using anything but the single group of vertical louvres while this year there are at least eight makers whose cars have some other kind of arrangement.

A change from the usual appearance of the front of the body has been given to cars such as Chrysler, Nash, Jordan, and others by terminating the top abruptly to give an impression reminiscent of the usual treatment of cabriolets. Some makers have left off visors entirely, others have placed them at a very sharp angle to the top, while others have substituted a screen inside the car for the external visor.



Continental's new eight-in-line single sleeve valve engine, which was exhibited for the first time at the show

Eight-in-Line Growth Features Engine Design

Twenty-two models at New York show fitted with powerplants of this type. Length is cut down by the use of smaller bores.

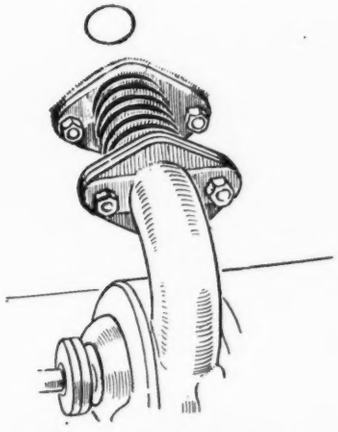
By P. M. Heldt

PERHAPS the outstanding feature of the 1927 New York show from a mechanical point of view is the the vogue of the eight-in-line engine. No less than twenty-two models of cars are shown equipped with this type of engine, marking a quite noticeable increase over last year.

The demand of increased power and snap, and for smooth running at all speeds, has rendered the eight-cylinder engine eminently suitable for passenger car work, and the disadvantage of its rather great length has been reduced to a minimum by using small bores as compared with the stroke, and by cutting down on dimensions in the axial direction in every legitimate way.

While it is not an entirely new feature, it is noticed that there is a tendency to make the heads of eight-cylinder engines in two castings. This minimizes trouble due to warping of the castings, and also makes it easier to equalize the compression chamber volumes, which is particularly important at the present time when compressions are carried very close to what appears to be the practical limit with ordinary commercial fuels.

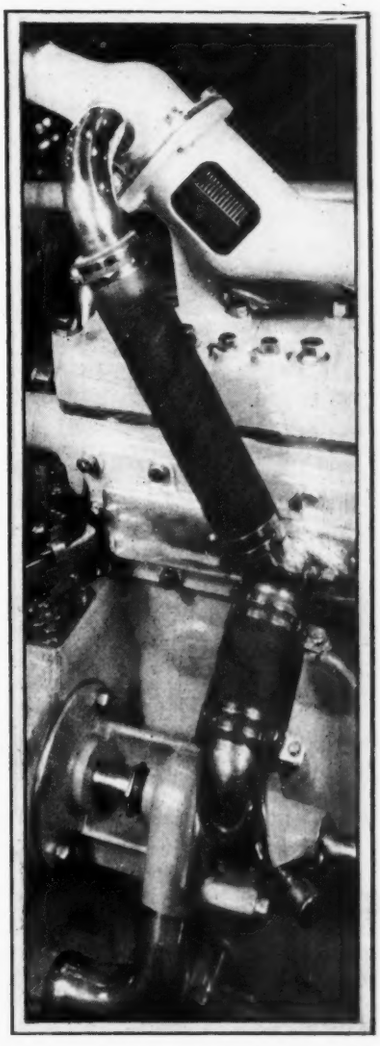
Compression ratios in the new models are being raised more than would appear from a comparison of the general average with that for previous years. The reduction in cylinder volumes due to the use of a larger number of cylinders naturally promotes this development, and the growing use of light alloy pistons, with their higher heat conductivity, is another favorable factor in this respect.



Copper bellows connection between pump and cylinder jacket on duPont

No doubt those who are leading the movement toward higher compressions are also influenced by the appearance of numerous anti-knock fuels on the market, for if an owner should be bothered by detonation he can cure it by the use of these special fuels.

About 30 per cent of all the models exhibited have aluminum alloy pistons, and the proportion is probably somewhat larger among the new models. The introduction of methods of design which permit of reducing the clearance to the same figure as with cast iron has eliminated the chief objection to the alloy piston as originally used, and paved the way to its more general employment.

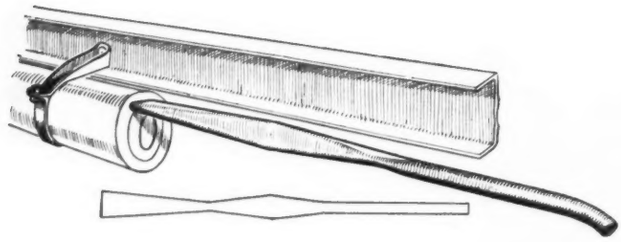


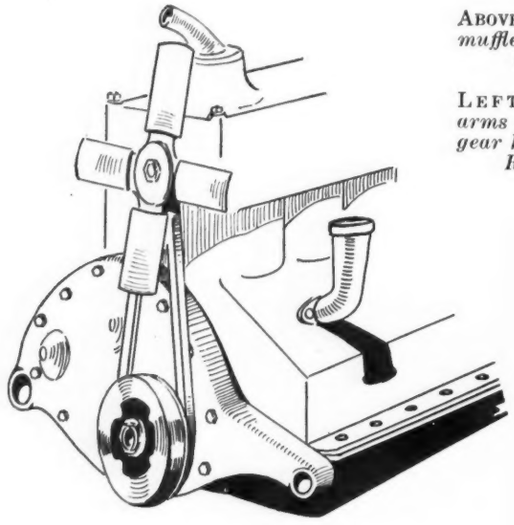
Connection of thermostat on new Paige chassis

There has been a slight gain in the use of duralumin for connecting rods, 6.4 per cent of the models now being fitted with them. Owing to the constant increase in speed, connecting rod weight is being cut down even if no change from ferrous material is made, and whereas S.A.E. No. 1035 steel was practically the standard for this part up to a few years ago, one-fourth of all engines now have connecting rods of some kind of alloy steel.

Much of the improvement in design, as compared with last year's models, is in the way of more extensive engine equipment. Thermostats for regulating the cooling action are an old feature, having been first introduced in automobile practice some 12 years ago, but their use is constantly growing. The thermostat either shuts off the radiator as long as the water in the engine jackets is below a certain temperature, or closes radiator shutters, which prevents flow of air through the radiators under the same conditions.

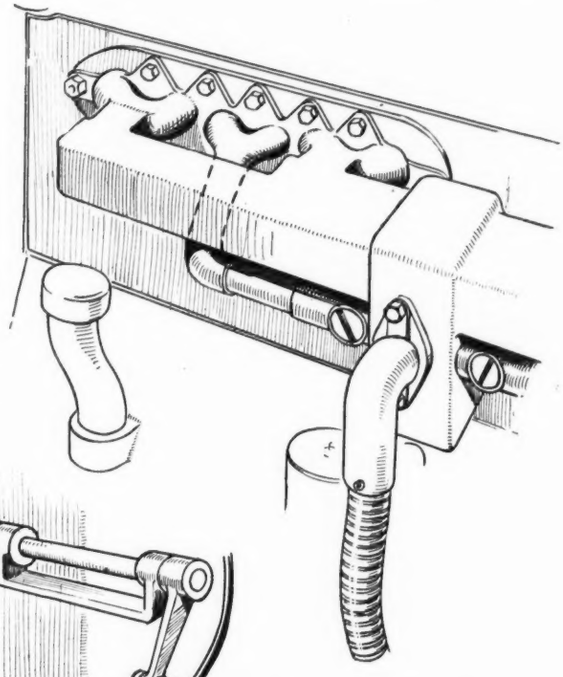
Thermostats are used for one purpose or the other on 42 per cent of the cars exhibited. A rather unusual application of the thermostat is found on the Paige car and is illustrated by the photograph reproduced herewith. The usual location for the thermostat, when used to control the water circulation, is in the outlet from the jacket at the forward end of the cylinder head, but on the Paige it is located to one side of the cylinder head in a water return manifold, and a by-

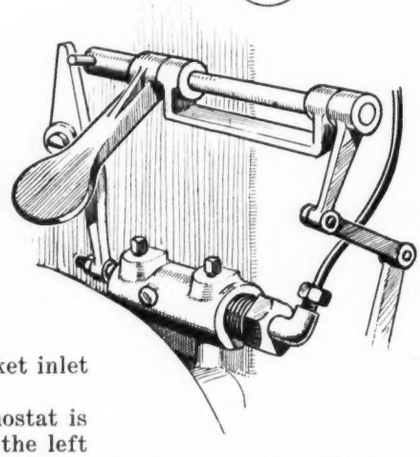




ABOVE: *Flattened muffler tail pipe on Chevrolet*

LEFT: *Supporting arms cast on timing gear housing of new Reo engine*





ABOVE: *Exhaust heating of inlet manifold on Stutz engine*

LEFT: *Anti-scuffing oil valve on Little Marmon*

pass from it carries the water back to the jacket inlet when the passage to the radiator is closed.

A somewhat unusual location for the thermostat is found also on the Wills Ste. Claire engine, to the left of the cylinder head and in the line to the radiator top tank.

While on the subject of cooling systems, reference may be made to an unusual connection between the pump and cylinder jacket on the duPont car. This is in the form of a syphon copper bellows with outwardly flanged ends which are clamped between finished bosses on the parts connected and clamping rings. The object aimed at is evidently to obtain a connection that is flexible in all directions, so that practically all danger of leaks is eliminated.

A Lubricating Problem

Ever since pressure lubrication became the accepted practice for high speed engines, the lag in the supply of lubricant to the cylinder walls when first starting a cold engine has been a serious problem.

Jardine has shown that when the lubricant in the sump is very viscous, due to low temperature, it takes a comparatively long time before any appreciable amount of oil works through the crankshaft bearings and is thrown onto the cylinder walls, etc. This is the cause of what has become known as scuffing of pistons. Marmon in its new small eight-cylinder engine has supplied a remedy which is illustrated by the accompanying sketch. The engine being of the valve-in-head type, an oil lead extends up its rear end for the lubrication of the rocker arm bearings, etc. From a point on this lead there is a branch which connects internally to the bores of all cylinders. Ordinarily this branch pipe is closed by a valve, but the valve is connected with the starter pedal and is held open as long as the pedal is depressed. This should assure the delivery of some oil to each cylinder bore at the first turn of the crankshaft, as the piping system is constantly filled and the pump begins to move oil immediately the engine turns over.

On all engines having inlet and exhaust ports on opposite sides (sleeve valve and some valve-in-head types), a problem is presented by the necessity of carrying some of the exhaust gases at least to the exhaust jacket on the inlet manifold, or to what is popularly known as the hot-spot. In some late designs of Knight engine the exhaust pipe is carried across the cylinder head at the center of the engine. On the Stutz engine, while the main exhaust ports are on the right-hand side, there are auxiliary exhaust ports on the same side as the inlet ports, and a special manifold of smaller dimensions carries some of the exhaust gases to the inlet manifold jacket, whence they are discharged through a flexible metallic tube connecting to a special muffler (see sketch).

Crankcase ventilation is a practice that has rapidly gained adherents the past year. It serves as a check on crankcase dilution and to regain some of the fuel lost by leakage past the pistons, and has long been used with kerosene-burning stationary engines, in which the evils of fuel condensation and oil dilution would otherwise be most pronounced.

Used on Many Cars

Among the car manufacturers now employing the practice are Cadillac, Oldsmobile, Reo, Buick and Moon. By admitting the carburetor air to the valve chamber at one end through louvres with rearwardly turned edges, and conducting it from the other end to the carburetor through a pipe, the valve chamber communicating with the crank-chamber, both an air-cleaning and a crankcase-ventilating effect are obtained with very simple means.

The majority of the air cleaners fitted are of the inertia type, which are the simplest and cheapest, but the filter type with oily surfaces is also coming into use.

On the Chevrolet the muffler tail pipe is flattened first on one plane and a little farther along in another plane at right angles thereto. This formation of a gaseous passage has been used to some extent in the past with inlet manifolds, to give what has become known as a "kneeding effect," but it is new in exhaust pipes, so far as the writer is aware. It has long been customary to flatten the outlet of the tail pipe, to introduce a slight resistance and thus to steady the rate of discharge, and the Chevrolet design evidently aims at the same object. The arrangement is shown in the sketch.

There is an evident reversion to the four-point engine support, which 10 years ago was greatly in the minority on passenger cars, while at the present time it is in the majority. This change in practice evidently has some connection with the endeavor to stiffen up frames, for a rigid crankcase secured to the frame channels at four points certainly has a pronounced stiffening effect, much greater than that of a crankcase with three-point support. Another object is said to be the prevention of front wheel shimmy.

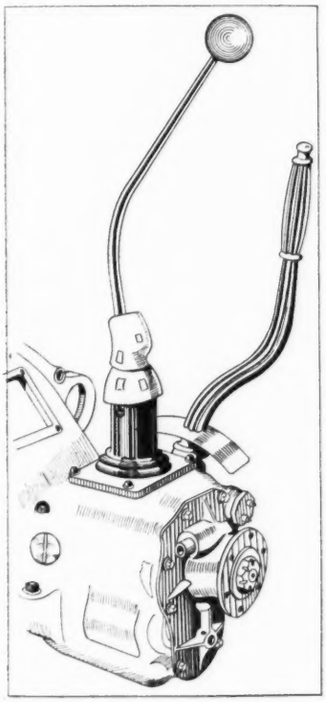
The best method of front support seems to be as yet an unsolved problem; at least there is no agreement among designers. Pressed steel engine bearers inserted between the crankcase and the timing-gear housing are used in some instances; in others supporting arms are cast on the crankcase at the forward end, while in the new Reo "Flying Cloud" the supporting arms are cast on the timing-gear housing, which forms a separate casting bolted to the crankcase. A sketch of this housing with its supporting arms is shown herewith.

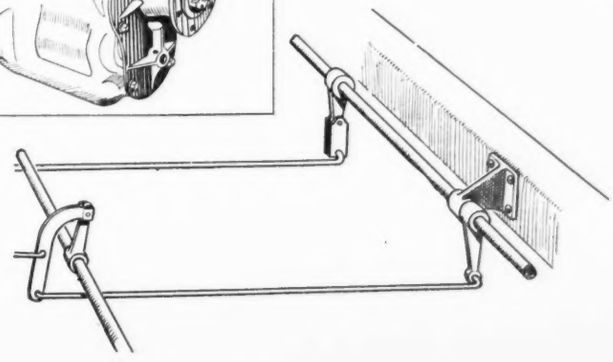
With the general change from multiple-disk clutches and the contraction of the size of gearboxes to which latter attention has been called on previous occasions, the distance from the rear end of the cylinder block to the center of the transmission cover plate, which generally marks the location of the mountings for the gearshift and emergency brake lever, has been materially reduced, and this has resulted in moving the lever mountings to inconveniently far forward positions, especially in large cars in which plenty of leg room is provided in the driver's compartment. This situation is met in the new Stearns-Knight eight-cylinder car by bending the levers as shown in the sketch. The lower end of the gearshift lever evidently must be substantially vertical in the neutral position, in order not to interfere with locking of the car. It is also desirable that the lower end of the brake lever have substantially equal motions to both sides of the vertical, as this reduces the length of the slot in the floorboards required to a minimum, while the upper end or handle also should be substantially vertical when in mid-position, as this is most convenient for the operator. This leads to the double bend shown.

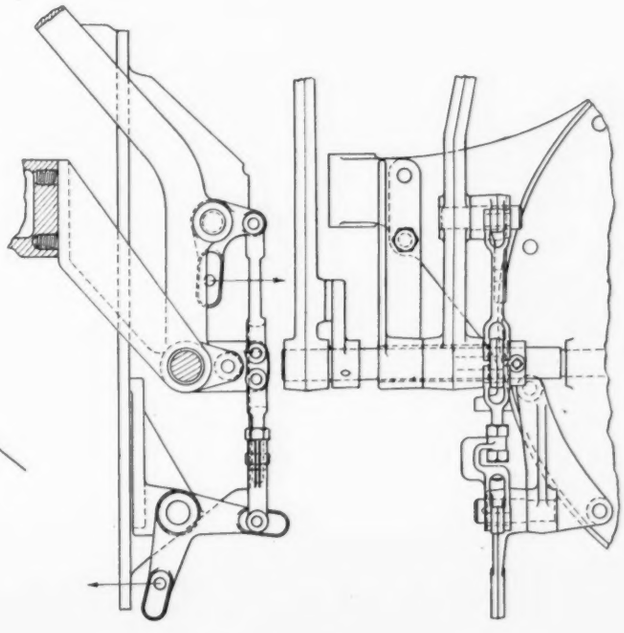
Brake Equalizers

Since the introduction of four-wheel brakes there has been much discussion regarding the merits and demerits of brake equalizers. Some makers see no benefit at all in the usual form of equalizer which equalizes only the force of brake application (sometimes not even that) and not the retarding force of the brake, while others lay great stress on the fact that complete equalization of the force of brake application is an inherent feature of their design.

As far as mechanical brakes are concerned, although certain proprietary makes are widely used, the car manufacturer generally decides for himself whether or not he wants to use equalizers, and if he does he designs the device himself. With four-wheel brakes equalizers can be inserted between the front and rear brake cross-shafts and also in each of these shafts, hence as many as three can be used per car, while in some instances none is used. In this connection it is apropos to point out that the term equalizer has become somewhat of a misnomer, because a device which divides the force of brake applications between front and rear brakes in the proportion of 40 to 60, as is



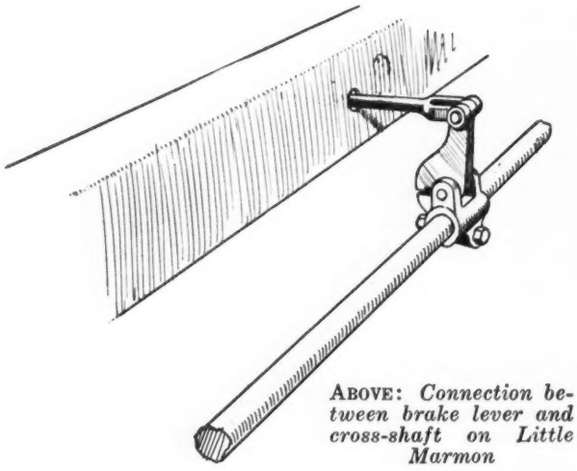




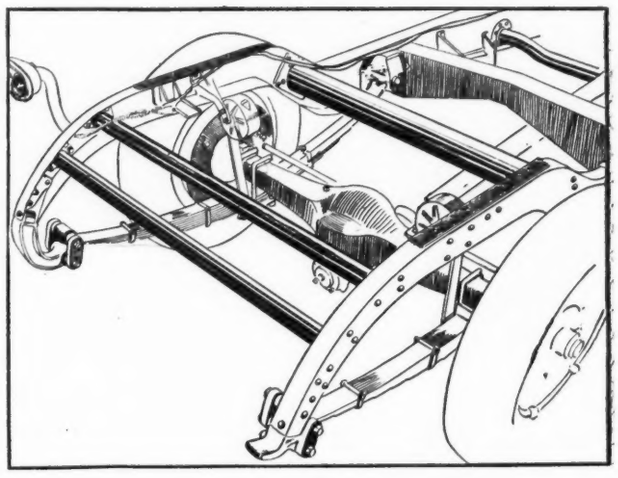
LEFT: *Control levers on new Stearns-Knight car*

RIGHT: *Auburn brake equalizer or proportioner*

BELOW: *Brake linkage of Oldsmobile*



ABOVE: *Connection between brake lever and cross-shaft on Little Marmon*



ABOVE: *Rear end of Stearns-Knight frame*

often the case, cannot logically be called an equalizer. Brake force proportioner would be a more fitting term.

The method of proportioning the braking force between the front and rear brakes on the Auburn 8-88 is illustrated herewith. The shank of the brake pedal is provided with a boss for a bellcrank, the downwardly extending arm of which connects to the rear wheel brakes. From a short rearwardly extending arm of the bellcrank there is a link connection to another bellcrank fulcrumed on a bracket secured to the rear of the flywheel housing. The downwardly extending arm of this bellcrank connects to the front-wheel brakes. An adjusting device is incorporated in the link connection by means of which adjustment for wear of brake bands can be made for all brakes simultaneously. From the downwardly extending arm of this second bellcrank connection is made to the front-wheel brakes.

It is at once obvious from the drawing that any depression of the brake pedal causes the upper bellcrank to pull the brake rod connected to it forward, and the lower bellcrank to pull its connecting rod backward, as required to apply the rear and front-wheel brakes respectively. The forces of application are balanced against each other. It will be noticed that the bellcranks are designed to vary the effective lengths of their arms, by drilling the holes farther in or out, and thus to change the proportion of the forces applied to the front and rear brakes.

Same Brake for Emergency

At the present time, as a consequence of the almost general adoption of brakes acting on drums on all four wheels, there is a strong tendency toward the elimination of separate emergency brakes. The brake band lever is continued but it generally acts on the same pair of rear-wheel brakes that are applied by the brake pedal. The method of hooking up the brakes used on the Oldsmobile and which is illustrated by the sketch herewith is typical.

A link extends from the brake pedal to the center of a balancing lever which is slightly curved and substantially vertical. From the upper end of this balance lever a link connects to a lever arm on a cross-shaft, which latter at its ends carries downwardly extending lever arms from which connection is made to the front brakes, while from the lower end of the balance lever connection is made to a cross-shaft further to the rear from which links extend to the rear-wheel brakes. The brake force is thus proportioned between front and rear but there is no equalization between brakes on opposite sides of the car. From the brake band lever a rod connects to a lever of special design which is secured to the rear cross-shaft. This lever consists of two parts which are joined together somewhat in the same manner as the blade and handle of a pocket knife. If the cross-shaft is turned when the brakes are applied by means of the pedal this lever folds up, as it were, so that the connection to the hand lever does not interfere with the operation. On the other hand, if the brake lever is pulled back, the lever arm on the cross-shaft straightens out and becomes rigid, permitting of the transmission of the brake force to the rear-wheel brakes. This form of compound lever is found on quite a number of cars.

On the new Little Marmon both the brake pedal and the brake lever are connected to the same cross-shaft by means of these compound "folding" levers.

The stiffening of chassis frames by the provision of a larger number of cross members, largely of tubular form, is nothing new but has been going on ever since closed cars became an appreciable proportion of the entire production. Today we are far beyond the type of frame—popular in the cheaper grades of car about a decade ago—in which there was only a single cross member, or none at all, between the flywheel housing supporting arms and the rear end, but the extent to which this stiffening of the frame has been carried is well illustrated by the sketch shown herewith of the rear end of the frame of the new Stearns-Knight eight-cylinder chassis. It will be noted that there are four tubular cross members at this part of the frame, one of considerable diameter, and in addition one cross member of inverted channel section which is slightly arched to clear the propeller shaft.

One of the changes in the Hudson chassis this year is a stiffening of the frame by increasing the depth of the section and providing more substantial cross members. As shown by the photograph, a double cross member is provided some distance back of the transmission, one member being fastened to the top flange and the other to the web and bottom flange, the propeller shaft passing between the two.

Among the Chevrolet improvements brought out at the show is a new tire carrier. The device is of triangular shape and forms really a combined tire carrier, license plate bracket and stop and tail-light bracket. The spare rim and tire are slipped over the carrier, the rim resting in a channel formed by the upper part of the carrier, and are rigidly secured at the bottom corner by a clamp plate and bolt. The design is neat, light and very rigid.

Here and There at the Show

ANY pessimist who thinks automobile shows are losing their interest should have been in the middle of the huge crowd that gathered in front of Grand Central Palace awaiting the opening of the doors for this year's show. There was almost a near riot when the doors finally swung open.

The heavy attendance on the opening day, setting probably a new record, gave a heavy jolt to the pessimists who had been predicting hard times for the industry.

Sam A. Miles, show manager, and the decorators paid their respects to the popular demand for colors by draping the Palace in hues brilliant enough to vie with the offerings of the manufacturers. It would take the color experts of the lacquer companies properly to name the shades of the draperies.

Here are just a few names of shades and colors heard while passing through the show—Labrador smoke, Gettysburg blue, Cape Cod gray, Czarina beige, Guernsey cream, Woodpecker red, Tanager scarlet, Pigskin brown, Scarab green, Niagara blue, Paul Revere green, Robin Hood blue, Peter Pan blue, sea fog grey, Monastery grey, Bambalina blue, Marne blue, Pueblo gray, Royal Oak green, Havana brown, Miami orange and Cleopatra.

Maybe this isn't new, but it did seem that the color motif was being carried out in the shop equipment. There were lavender cranes, orange jacks and blue whatnots.

The Twentieth Century Limited carried six extra sections on Monday to care for crowds from Chicago and points en route coming to the show. The Monday Detroit train had four or five extra sections also.

Five car names which were listed at the 1926 show are missing this year. Since the last exhibit the Jewett has been merged with the Paige line; the Ajax is now the Nash Light Six; the Cleveland carries a Chandler nameplate and the Durant and Gray are no longer in production.

Four companies exhibited eight-cylinder models this year for the first time—Stearns, Chandler, Paige and Marmon. One eight, the Wills Ste. Claire, has been discontinued since the last show.

Ford, as usual, is staging an exhibit of his own at the company branch, 54th and Broadway. He is showing a collection of vehicles of every age to depict the progress of transportation. The display starts with a primitive ox-cart and ends with an airplane.

When any car manufacturer breaks away from standard body lines the motoring public is interested. This was demonstrated very quickly after the doors opened on the New York show, for there was soon a large group looking at the new Cavalier and Ambassador models, which were on exhibition in the Nash booth for the first time. The new models attracted much attention throughout the show.

"Charley" Schwab and Fred Moskovics tried hard to talk business in an aisle of the Stutz exhibit at the Commodore Hotel, but interruptions were so frequent that they finally had to climb into the sheltered back seat of a Stutz sedan to complete their conference.

Among the old timers in the industry who were present on the opening day of the New York show was George B. McCutcheon, who came up from Florida to see the exhibit. Mr. McCutcheon is a former Atlanta branch manager for the Buick Motor Co., and managed the Willys-Overland interests in Philadelphia until recently, when ill health made it necessary for him to go to Florida to recuperate. He is at present located in Orlando.

The Chrysler Corp., with four cut-away chassis models, had the most extensive offering along this line of any company in this year's show.

The American public is very much interested in light cars, as was demonstrated during the entire week by the crowds that gathered around new showings of this type of car. Within half an hour of the opening of the doors at New York, it was hard to get through the aisle in front of the Erskine exhibit even though it was not on the main floor.

Visual evidence of the stability of Stutz motor cars was furnished visitors to the Stutz exhibit where, all week, a Stutz sedan was tipped over at an angle of 48 degrees.

Jordan sprung a surprise by introducing a six. Everybody knew Jordan was going to have something new—but they expected it to be an eight.

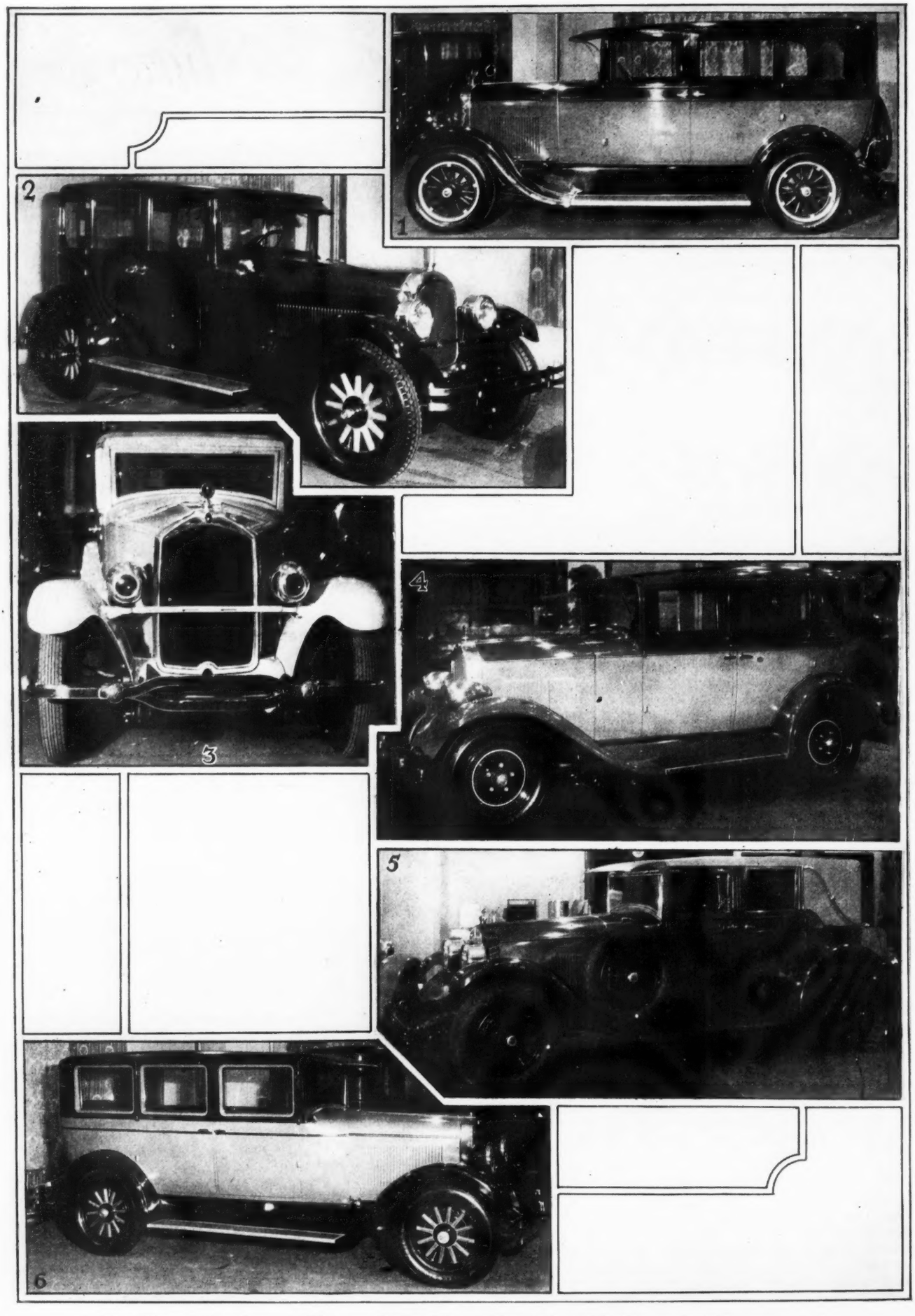
One impression gathered in making the rounds the opening day was that the proportion of visitors from other lands was unusually high. On all sides foreign accents were heard and the character of the comments was often professional. It seemed a happy augury for export business in 1927.

Among the first arrivals at the Grand Central Palace on Saturday was P. M. Heldt, engineering editor of *Automotive Industries*. It is the 27th consecutive year that he has attended the New York show in a professional capacity. He was there when the first show opened in 1900.

Only one strictly new car name appeared among the passenger cars displayed, this being the Erskine Six. The new Falcon-Knight Six also was in New York but was given a private showing.

More than one veteran attendant at automobile shows was impressed with the interest shown by the public in the new offerings. Where a wholly new model or line of cars was on display this seemed to have registered immediately with the visitors and they were keen to learn all the points about the new jobs.

The visitors were not only looking; they were also buying. Many sales were made on the floor during the opening day.



1. New Elcar 6-70 sedan. 2. The new Locomobile. 3. Front view of Jordan convertible coupe. 4. Jordan Six sedan. 5. duPont convertible sedan. 6. Peerless 60 sedan

Jordan, Falcon, Peerless and Other New Models Introduced

Jordan's offering is small six selling at $1595. Private showing made of Falcon sleeve valve six. Locomobile, Elcar and Kissel also exhibit new chassis.

A NUMBER of new models and several entirely new chassis were announced at the show, no material concerning which had previously been published. In the following paragraphs appear descriptions of such models:

Jordan

JORDAN'S introduction of a small six-cylinder car modeled along the lines of the higher priced jobs and embodying many mechanical and body features common to European type cars was among the important events at the show. This model is an addition to the two larger Jordan eight-cylinder cars which will continue in regular production.

Prices, f.o.b. Cleveland, were announced as follows: Four-door sedan, $1595; cabriolet roadster, $1595; two-door brougham, $1595.

New methods of rubber mounting the six-cylinder L-head engine in the special frame, new style spring arrangements and the use of an under-mounted worm drive rear axle has resulted in the new Jordan car having a very low appearance. It has an overall length of 165¾ in. and is but 66 in. high. Standard tread is used both front and rear, while Lockheed external hydraulic four-wheel brakes and 28 x 5.25 in. balloon tires are standard equipment.

Three body styles of new and striking appearance make up the line. These bodies, known as the five-passenger custom sedan, "Little Playboy" cabriolet coupe with folding top and rumble seat and the four-passenger sport salon, are of composite construction and manufactured by Murray Body Corp.

Unusual attention has been paid to the appointment of the interiors. On the salon model, for example, individual roll type foot rests secured to the floor by leather straps are provided, while all models have the panel above the instrument board embellished by a wicker basket weave insert which extends across the front of the body. The instruments, grouped in an unusual walnut panel, include a Sterling electric clock and gasoline gage.

One-piece fenders of the slightly crowned type and of long sweeping contour, in conjunction with a high narrow radiator formed of highly polished aluminum, give the car a very distinctive touch. A feature of the radiator design is that the core sets back considerably from the shell which tends to add greater length to the hood.

E. & J. bullet-shaped headlights of polished aluminum, and special style bumpers, are provided also. Cars were shown with both disk and wire wheels, the latter being exhibited with both fully nickeled and also lacquered spokes and hubs. Sun visors are not provided on any body models; the roof finishes abruptly slightly ahead of the windshield with the forward end slanting downward and backward. On the salon model, which is a two-door car, the roof structure is of the soft-top type. The permanently located, tan-colored top extends down to the body belt at the rear. Similar roof construction is employed for the cabriolet model except the top is collapsible while the sedan employs rounded metal sides and rear panels for the roof. The cars are characterized by a narrow belt effect and striking mono-tone colors.

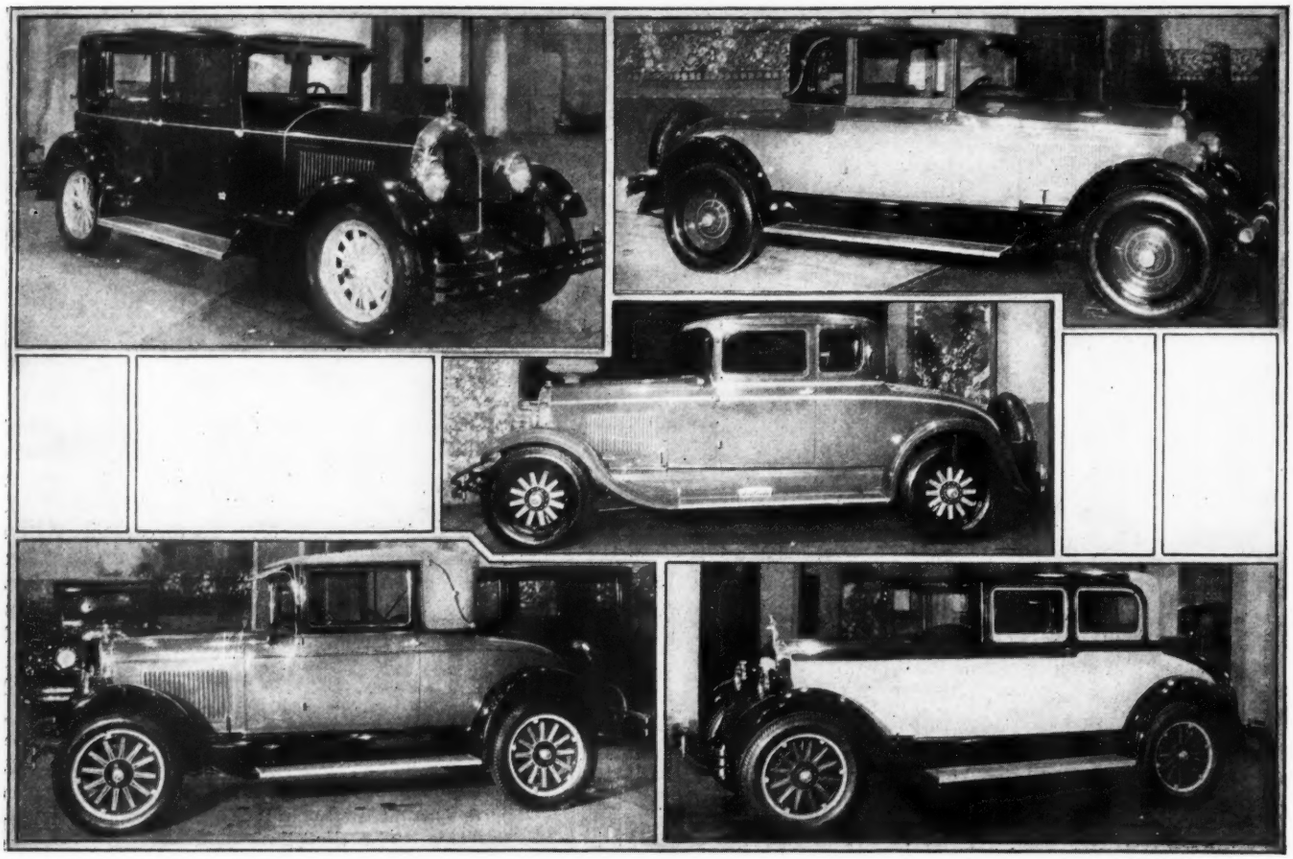
Built by Continental Motors Corp. to the special design of the Jordan engineers, the six-cylinder L-head, seven-bearing crankshaft engine has a bore and stroke of 3¼ x 4 in., giving a rated horsepower of 25.3 and a piston displacement of 199 cu. in. The design of the engine does not show any radical departure from conventional practice. The distributor is mounted on the top of the cylinder block and driven by a vertical shaft from the camshaft, the generator is driven off the front timing chain in the usual manner while the starter meshes with the flywheel through the Bendix drive on the other side of the engine. All electrical units are of Auto-Lite make. Air for the special Stromberg carburetor is taken through the rear valve cover plate while louvres are provided on the front valve cover plate to admit air into the crankcase, thus providing a method of ventilating the crankcase.

Formed in unit with the engine is the single-plate dry clutch and a conventional three-speed transmission. The usual form of tubular propeller shaft and metal universal joint drive is provided to the rear axle. The latter is of the under-mounted worm-drive type and of Timken manufacture. The front axle is of conventional I-beam section except that a very deep drop is provided.

The springs were built up to be used in conjunction with Houdaille hydraulic shock absorbers and the use of flexible leaves in connection with the hydraulic shock absorbers has provided smooth spring action. The springs are of the semi-elliptic type and anchored by automatic take-up shackle bolts. Special fittings are provided for the rear springs so that the springs lie parallel to the frame.

Falcon-Knight

AT a private showing held coincident with the New York show, the details of the new Falcon-Knight car—the low priced six-cylinder Knight-engined car sponsored by John N. Willys—were made known to the dealers who will handle it when it is formally introduced this spring. It will be offered with a complete line of body models and will sell in the $1000 price range.



UPPER LEFT: *New Kissel Eight.* UPPER RIGHT: *Paige coupe on eight-cylinder chassis.* CENTER: *Reo Flying Cloud victoria.* LOWER LEFT: *Oldsmobile cabriolet coupe.* LOWER RIGHT: *Velie four-passenger coupe on "60" chassis*

The new model, manufactured by the Falcon Motors Corp., whose plant is located at Elyria, Ohio, will be marketed through a separate dealer organization handling this line of cars only. Six body styles comprising a touring, roadster, coupe, coach, landau and sedan will complete the line when full production schedules are reached.

The powerplant is a Knight sleeve valve seven-bearing engine of 2 13/16 x 3⅞ in. bore and stroke. It is manufactured by the Wilson Machine & Foundry Co. and the design follows closely the general layout of the latest engine built by the Wilson company. A Borg & Beck clutch with a cushion drive insert and a conventional three-speed transmission are formed in unit with the engine, which is secured to the frame at four points by rigid mountings. The usual form of drive with metal universal joints is utilized to connect the engine with the semi-floating, spiral bevel rear axle. Bendix three-shoe internal brakes are used on all four wheels while the steering gear is a conventional worm and wheel unit. Other specifications of the chassis include a wheelbase of 109½ in., a tire size of 30 x 5 in., semi-elliptic springs, and pressure gun lubrication.

Composite construction is employed for the bodies. At 3000 r.p.m. the engine develops better than 46 b.hp. while employing a compression ratio of 18 per cent. The N.A.C.C. horsepower rating is given at 20.7.

The cylinder block of cast iron is bolted to the upper half of the crankcase, which is formed of the same material. The sleeves are driven in the usual manner by a Link-Belt chain provided with an automatic tightener idler. Seven bearings are employed to support the crankshaft which has main journals of 2¼ in. diameter. Connecting rods of conventional I-beam section have a center to center length of 9½ in. while the pistons, formed of cast iron, employ three ⅛ in. width rings, all above the pin. Lubrication to crankshaft, connecting rods, eccentric shaft bearings and to the timing chain is by a gear pump carried in the oil pan. A Skinner oil rectifier taking oil off the sleeves only is employed in conjunction with the oiling system. Cooling is by a combined fan and water pump unit mounted on the front of the block in connection with a special Fedders radiator of the cellular type.

The method of carburetion is similar to that employed on the latest Knight engine. The exhaust is brought over the top of the engine where it circulates around the intake hot-spot. A Tillotson inertia air cleaner is used with a special carburetor of the same make. All electrical units are Auto-Lite, the ignition distributor being driven off gears from the generator with the starter meshing with the flywheel by the usual Bendix drive.

In the clutch a rubber insert is used to provide a cushion form of drive. The transmission of the usual three-speed type provides a low gear ratio of 3.625 and has the clutch and main shaft carried on annular ball bearings.

The rear axle of the semi-floating spiral bevel type provides a final drive of 5.11 to 1. It is of the built-up housing type and carries the integral pinion shaft on two sets of ball bearings. Propulsion and torque stresses are taken by the Hotchkiss arrangement.

The four-wheel Bendix brakes provide a total braking area of 224 sq. in. with the hand brake giving 112 sq. in. The emergency brake operates the rear service brakes

only through a slip link in the hook-up of the rods. Conventional metal shackle bolts are employed to anchor the semi-elliptic springs. The latter are 34½ x 1¾ in. on the front and 51¾ x 1¾ in. at the rear. The frame is of the conventional type, being formed of 5/32 in. stock and having a depth of 4¼ in.

Peerless

ENTERING the $1300 price class with an entirely new six-cylinder car, the Peerless Motor Car Co. presented the fifth chassis model to be included in the Peerless line for 1927. One body model only of the new car, known as the series "60," was exhibited. When full production schedules on the new car are reached in the early spring, a complete line of bodies will be available.

While considerably smaller than any of the other Peerless cars, the new model inherits most of the essential features which are characteristic of the present Peerless line. The engine is of special Continental make for the Peerless company and has a bore and stroke of 3¼ x 4 in., which gives it a rated horsepower of 25.35 and a piston displacement of 199 cu. in. Both the single-plate clutch and the conventional three-speed transmission are bolted to the engine bell housing, forming a single unit. Trunnion type universal joints and a tubular propeller shaft transmit the drive to the semi-floating Columbia make spiral bevel rear axle. Four-wheel hydraulic Lockheed brakes of the external contracting type are standard equipment. The wheelbase of this model is 116 in. and the standard tire size 29 x 5.25 in.

While only a five-passenger sedan was exhibited, the construction of the other bodies will be along the same line. Composite construction is employed while the bodies have the roof extended over the windshield to form an integral visor.

Conventional type mountings are utilized to support the powerplant at four points in the chassis frame. According to figures furnished by the company, the engine develops 52 b.hp. at 3000 r.p.m. In line with present design the block and crankcase are cast integral with the head detachable and the oil pan of pressed steel. Seven bearings are provided to support the fully balanced crankshaft. The latter has main journals of 2⅛ in. diameter. Connecting rods of regular I-beam design have a center to center length of 8 in. with the diameter of the big end bearing 1⅞ in. Aluminum pistons employing three rings above the pin are employed. The latter is locked in the piston and operates in a bushing in the connecting rod.

Drive to the four-bearing camshaft is by a silent chain with adjustment for stretch being taken care of by swinging the generator. Valves are of integral design, the exhaust being of silchrome with the intake of nickel steel. A special type Stromberg carburetor is used in conjunction with the new manifolding which is said to reduce considerably the time necessary for warming up. All three electrical units are of Auto-Lite manufacture and carried on the engine in the usual manner. The combined fan and water pump unit is mounted at the front of the cylinder block and operated from the crankshaft by a V-belt.

Embodied in the 10 in. single-plate clutch is a carbon-graphite throw-out bearing which requires no lubrication. While the transmission is of the conventional three-speed type providing a low speed ratio of 3.11 to 1, a feature of this unit is a stamped shift which eliminates the separate rods and forks and makes for simpler servicing. The spline shaft is mounted on Hyatt roller bearings at the front end and on a large ball bearing at the rear.

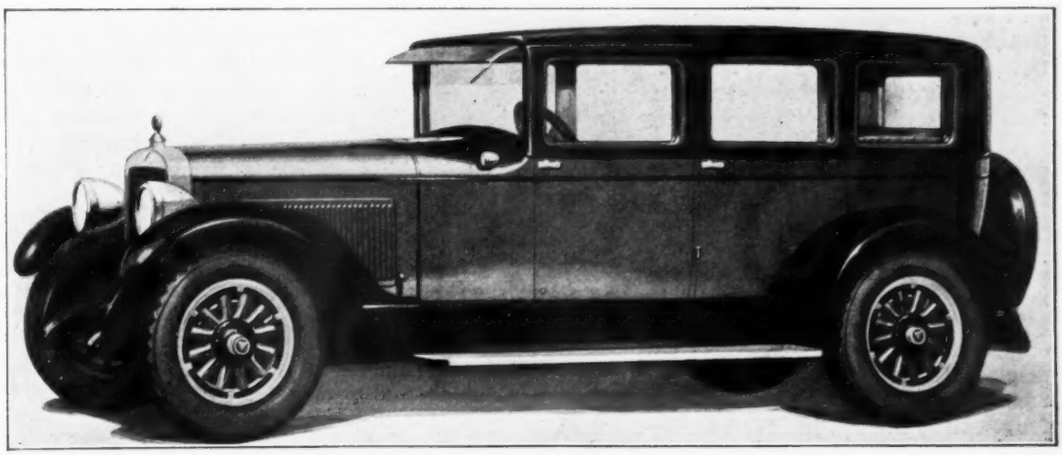
Banjo Type Rear Axle

Of Columbia make, the rear axle is of the banjo type and employing the regular spiral bevel form of drive. The drive is through the Hotchkiss arrangement. The standard gear ratio is 4 4/9 to 1.

Service brakes are of the usual Lockheed type operating on 12 in. diameter drums front and rear. The emergency brake operates on a drum of 7 in. diameter located behind the transmission. A Ross cam and lever type steering unit is employed while the steering wheel is 17 in. in diameter. Springs are of the usual semi-elliptic form, being anchored to the frame by spring non-wearing shackle bolts. Front springs are 37¾ in. long by 1¾ in. wide while those on the rear are 54¼ in. long by 2 in. wide. The frame is of pressed steel having a depth of 7 in. and formed of ⅛ in. stock. Including the rear engine support, the frame has five cross members. Artillery wheels are standard equipment.

Davis

TWO new body models on the "94" chassis, a five-passenger roadster and a redesigned three-passenger coupe, were exhibited by the George E. Davis Motor Car Co., listing at $1245 and $1285 respectively. The coupe body has been lengthened to provide more leg room and is now equipped with the Fisher ventilating windshield. Leg room has also been increased and a VV windshield provided on the sedan, which now has velour upholstery. The headlights are now controlled from the steering wheel on all models. Radiator capacity has also been increased 20 per cent.



The new Hudson Super-Six sedan, one of the new models at the show

Franklin

A NEW convertible coupe, listing at $2950, has been added to the Franklin line. This model will probably be ready for May or June delivery. A rumble seat is provided on this model, which is finished in Derby red lacquer.

Elcar

WITH the addition of a new six, the 6-70, replacing the former 6-65 model, Elcar Motor Co. has three chassis models in its 1927 line, one six and two eights. Three body models are at present included on the new six, priced at approximately $200 less than on the former six-cylinder chassis. As on other Elcar chassis for 1927, rubber shock insulators are used in the spring suspension, while the engines are also cushioned on rubber.

A Lycoming W-10, of 2⅞ x 4¾ in. bore and stroke, is used on the new six. With a piston displacement of 185 cu. in., this engine develops a maximum of about 60 hp.

A 1 in. Swan carburetor with the Swan manifold used on the other Elcar models is also provided on the 6-70, as are Delco-Remy electrical units and twin beam headlights.

A three-speed Warner transmission and single-plate Long 8C clutch are mounted in unit with the engine. Metal universal joints and semi-floating rear axle of Salisbury make are similar to units on the 6-65, while the rear axle gear ratio on the 6-70 is 4.9 to 1. The front axle, also of Salisbury make, is of I-section with the pivot pins and wheel spindles inclined at 7 and 1½ degrees respectively. External contracting Lockheed hydraulic four-wheel brakes with 14 in. drums are standard, a separate transmission brake being operated by the hand lever. Steering gear is a Ross cam and lever and springs are identical with those used on the 6-65.

Eighteen-inch artillery wheels have been adopted as standard equipment on the new six, tires being 28 x 5.25 balloons. Although the wheelbase of the 6-70 is 117 in., the outside diameter of the turning circle is said to be only 39 feet.

Locomobile

DESIGNED to provide an eight-in-line car embodying Locomobile 90 body and chassis characteristics, the Locomobile Co. of America has rounded out its line with a new 8-80 model. The new chassis model fits into a price class about $1000 higher than the Junior Eight, on which price reductions from $255 to $310 were announced. The five-passenger, four-door sedan on the new 8-80, 130 in. wheelbase chassis, lists at $2850.

Aside from the engine, the chassis and the body lines follow very closely the design of the Locomobile 90.

The engine, a special-built Lycoming of 3¼ in. bore and 4½ in. stroke, embodies a Ricardo type head, Nelson pistons and alloy steel connecting rods. Aside from the special features incorporated by Locomobile, the engine fundamentally is the same as the large eight-cylinder engine which Lycoming is at present supplying to a number of passenger car manufacturers.

With the changes incorporated by Locomobile, the engine now develops 90 hp. at 3200 r.p.m., with a piston displacement of 298.5 cu. in., its rated horsepower being 33.8. A Lanchester vibration damper is fitted at the front end of the 2⅜ in., five-bearing crankshaft. Valves are of silicon chrome steel. The six-bearing camshaft is driven by a Link-Belt chain with automatic take-up.

As on the Locomobile 90 and Junior Eight, DeJon electrical units are used, while the carburetor is a plain tube Stromberg. An oil filter is provided at the front of the dash.

Of the transmission units, the clutch is a single plate Borg & Beck, the three-speed gearset is manufactured by the Warner Corp. and assembled in unit with the engine; universal joints are of Spicer manufacture, and Salisbury axles are used both front and rear, the rear axle being semi-floating with a banjo type housing and a gear ratio for the spiral bevel drive of 4.81 to 1. All springs are mounted in rubber shock insulators, the rear springs, which take care of both torque reaction and propulsion, being 38 x 2¼ in. while the front springs are 37 9/16 x 2 in., all being semi-elliptics.

As on the 90 and Junior Eight models, Bendix-Perrot internal expanding brakes are provided on all four wheels, the emergency brake actuating the rear wheel brakes only. Equalization of braking pressure is provided between the front and rear pairs. Drums are 14 in. in diameter and 2 in. wide, giving a total braking area of 313 sq. in.

All other models are continued at the same price. Deliveries on the new 8-80 models will probably be made around April 15.

Kissel

FALLING in a price class midway between its six-cylinder "55" and eight-cylinder "75" models, Kissel's new "Popular Straight Eight," the 8-65, represents a combination of features of both these chassis. While the wheelbase is one inch longer than that of the six, being 125 in., the chassis units are for the most part interchangeable with that model. The engine is a smaller edition of the Model 75 powerplant, while the body models are now for the most part interchangeable with slight modifications on all three chassis.

With a bore and stroke of 2⅞ x 4¾ in., the engine of the new eight develops a maximum of 65 hp., piston displacement being 247 cu. in., with a rated horsepower of 26.4. As on the larger eight, Lynite split-skirt, three-ring pistons are used, the lower ring being of the oil control type. Connecting rods are also of Lynite, with a 2⅛ in. diameter crankpin bearing. Piston pins are ¾ in. and the 2¼ in crankshaft has five main bearings, with a Lanchester vibration damper fitted at the front end. The 1½ in. valves are of silicon chrome steel, the arrangement being of the L-head type. The camshaft is driven by a Link-Belt chain, a link chain of composition material being used also to drive the generator. As on the other Kissel models, the engine is cushioned in rubber.

Transmission, clutch, universals and axles are identical with those used on the six-cylinder chassis except that the gear ratio on the new eight is 4.9 to 1. Tires are 32 x 6.00 balloons mounted on 20 in. artillery wheels.

Chrysler

AN addition to the Chrysler Imperial 80 chassis in the form of a sportiff touring was exhibited at the Hotel Commodore during the show. This model, which follows European lines to a great extent, incorporates folding windshields in both front and rear compartments, the rear compartment also being provided with a tonneau apron.

New Truck Models Reveal Influence of Passenger Car Design

Commercial vehicle builders giving more attention this year than ever before to comfort and appearance of their products. Buick engine used in new Yellocab.

By Albert G. Metz

THE truck section of the New York show created more than passing interest because of the passenger car influence seen in the exhibits. The appearance of the vehicles showed all the "class," to put it mildly, that could be found in any passenger car exhibit. Most of the chassis and bodies displayed were of the speed or delivery class, wherein the tendency of "dolling up" the vehicle is most evident.

Another indication of the trend toward passenger car design is the increase in six-cylinder models announced by motor truck manufacturers during the past year. At the show approximately 14 six-cylinder chassis models were displayed by nine manufacturers. Three manufacturers, Autocar, Cunningham and Yellow, had four-wheel brake models.

From a mechanical standpoint there was nothing radically new.

The tendency is to increase driver comfort and, by the adaptation of many passenger car features, produce a job that will handle better, look better and perform better.

Vibration dampers, oil cleaners, air cleaners, four-wheel brakes, easier brake pedal operation and pressure feed oiling systems, all of which some time ago were not considered very seriously in truck design, are now becoming standard practice.

Products of a number of manufacturers, particularly General Motors products, were shown in Duco finishes, while lacquers and enamel were offered by other builders. The ordinary paint job was noticeable by its absence on most models displayed.

A few manufacturers showed brand new models, but most of the vehicles have been described in past issues of this publication.

Autocar showed its new 1½-ton Model A delivery job, which is powered by a four-cylinder Autocar engine. This model carries a Timken rear and four-wheel brakes. The job was finished in canary yellow with black striping.

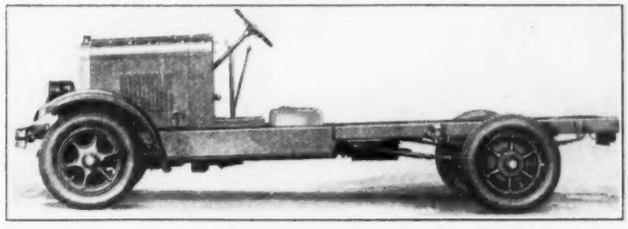
Three new truck models were shown by the General Motors Truck Co., under the new trade name of "Yellocab." These jobs utilize well-known Buick six-cylinder Standard and Master Six powerplants. The models include a 1-ton Yellocab Express and a 2-ton Yellocab Merchant, the latter being furnished with either spiral bevel or worm drive rear axle. The 2-ton model is furnished with Bendix four-wheel brakes. Extra heavy Timken truck type axles are found on all models. Prices will not be announced until around March 1 while production will not start until about March 15.

The 1-ton truck, known as Model T-20, has a chassis road weight of 2750 lb. with a wheelbase of 132 in. The 2-ton Model T-40, with spiral bevel drive and pneumatic tire equipment, has a chassis road weight of 4325 lb., and will be furnished in three wheelbases, 136, 150 and 162 in. Another 2-ton model, the T-50, will have worm drive and solid tires, with same wheelbases as Model T-40. The chassis' road weight is 4630 lb.

Among the features of this new line are nickel-plated radiator shell, with non-freezing core; multiple-disk, 10-plate clutch inclosed in engine bell housing; pressure feed lubrication of all main and connecting rod bearings; three-speed transmission; 6-in. channel frame, 3/16-in. thick with 2-in. flange on the 1-ton model and a 6½ x ¼ x 3-in. frame on the 2-ton model. Tires on the 1-ton are 30 x 5 pneumatic front and rear, with provision for 32 x 6 oversize. On the 2-ton T-40 tires front are 32 x 6 and rear 34 x 7 non-skid pneumatic cord, with 32 x 6 front and dual rear at extra cost. The solid tires on Model T-50 are 34 x 4 front and 43 x 7 rear.

Federal Motor Truck Co. had eight chassis on display, all done in white with black striping, thereby giving a very distinctive appearance to its exhibit. The feature was the new Federal 1-ton "Scout" model, listing at $995. Ten body styles with open and closed cabs are offered with this model. The engine is a four-cylinder 3½ x 4½-in. bore and stroke with Ricardo head. The powerplant is secured to the frame at three points on special shock insulation rubber mountings. The capacity of this job is 2000 lb. in excess of the 750-lb. body allowance, while the chassis weight is 2400 lb. To insure frequent lubrication of the clutch bearings an oil cup is mounted on the toe board. Transmission ratios are 3.65 to 1 in low and 1.84 to 1 in second. This chassis is also furnished in 136-in. wheelbase at extra cost.

Larrabee-Deyo, pioneers in the six-cylinder speed truck class, showed two new models, a Model X-21,



Garford Model 20, 1-ton truck

rated at 1½-2 tons capacity, and the Larrabee Laddie, rated at ¾-ton. The Model X-21 uses a Continental Model 8R 6-cylinder engine of 3⅜ x 4½ in. This engine is equipped with a Zenith carburetor, United air cleaner and American Bosch 6-volt starting, lighting and ignition system. The axle is a full-floating Timken, bevel type, while the transmission is a Brown-Lipe Model 31, three-speed.

Model 20, a 1-ton, high-speed truck, is the latest addition to the Garford line and was displayed for the first time at the New York show. Among the features of this model are a speed range from 15 to 50 m.p.h., 26-in. high frame, increased driving comfort and easy steering.

Standard wheelbases are 136 and 156 in. Body allowance is 1000 lb. The engine is four-cylinder, 3¾ by 5⅛-in. cast en bloc with detachable head, and is suspended from three points. A six-cylinder engine, 3⅜ by 4½ in. is optional equipment at additional cost. The crankcase is cast in two parts and the flywheel is fully inclosed. The crankshaft, of forged alloy steel, is balanced statically and dynamically.

Battery ignition with manual spark plug control is provided. The carburetor is of the float-feed, double-jet type with an auxiliary starting well. Lubrication is force feed from a gear-driven pump and a pressure indicator is placed on the instrument board. A direct drive, centrifugal pump circulates water which is cooled with the aid of an 18 in. four-blade fan. The clutch is a single plate type, 11 in. in diameter. The transmission provides three forward speeds and reverse.

Three universal joints are employed in the driveshaft line, and all are of steel. Two sets of brakes operate independently on the rear wheels.

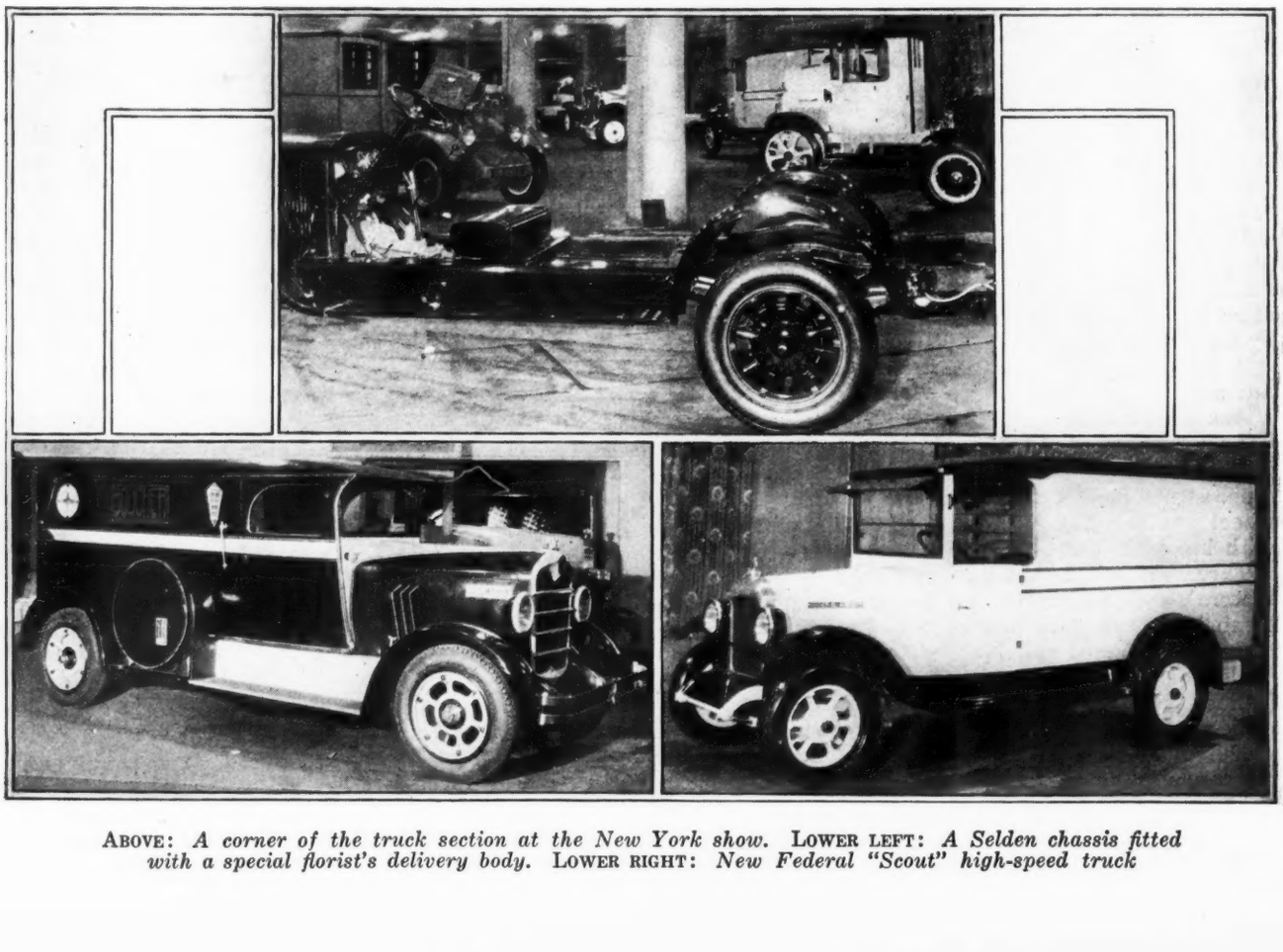
A complete line of Chevrolet trucks was shown. A new job for contractors was exhibited by The G. A. Schacht Motor Truck Co., having a capacity of 7000 lb., and equipped with a St. Paul underbody hoist and steel body. This model can be furnished in optional wheelbases of 118 and 132 in. The powerplant is a Wisconsin SU 4 x 5-in. engine, driving through a four-speed transmission and full-floating rear axle. Selden attracted considerable attention with a special custom-built body on its six-cylinder Pacemaker chassis. This body is bizarre in design. A feature was the radiator design which includes an illuminated nameplate. A lamp is mounted inside of the radiator shell.

Pontiac showed a new screen body of de luxe design which lists at $760 f.o.b. factory. This chassis is identical with the panel type model listing at $770, which was announced by General Motors four months ago.

The National Motors Mfg. Co., Irvington, N. J., displayed its new "Speedway Six" in the balcony of the Hotel Commodore. This is a 1-ton job with pneumatic tires, listing at $1345. The engine is a Continental 11-U, 3¼ x 4⅝ in. with 60 hp. rating. Accessibility of design, seven-bearing crankshaft, vibration eliminator, a unique effortless brake leverage principle and oversize construction throughout are some of the features.

A new one-ton, six-cylinder truck was displayed by Stewart Motor Corp., Buffalo. This job is, in general, similar to the ¾-ton Buddy Stewart announced some time ago.

It is powered with a Continental, 2⅞ by 4¾-in. engine which develops 42 hp. on the block. The 2⅛-in. crankshaft is supported on four bearings. Rear axle shafts are 2 in. in diameter and are of nickel steel. Service brakes are of the external type operating on 2½ by 14-in. drums. Wheelbase is 128 in.



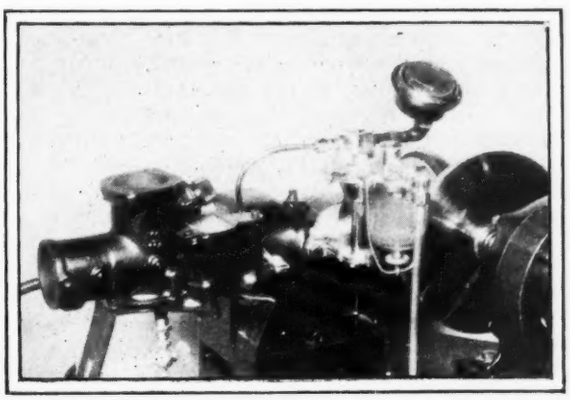
ABOVE: *A corner of the truck section at the New York show.* LOWER LEFT: *A Selden chassis fitted with a special florist's delivery body.* LOWER RIGHT: *New Federal "Scout" high-speed truck*

Many New Accessories Shown

Mechanically-operated gasoline pump exhibited in New York by AC Spark Plug Co. "Anti-preloading" snubber development.

NICKEL-PLATING and brilliant colors are being used more than ever before by accessory manufacturers in dressing up their products to make them harmonize with the color and contour of the car for which they are intended.

Sections of two floors, the third and fourth of the Grand Central Palace, were devoted to accessories at the show. The booths were tastefully decorated and wherever possible the accessories were shown in action.



Demonstration set-up of new AC mechanically-operated gasoline pump for motor vehicles

Bumpers, as usual, seemed to predominate the accessories, with shock absorbers a close second. Tubular bumpers in particular are being finished in colors while the flat bar bumpers still are mostly finished in nickel and black.

A great number and variety of radiator emblems, finished in nickel brass and lacquer, were shown. Radiator shutters were also numerous.

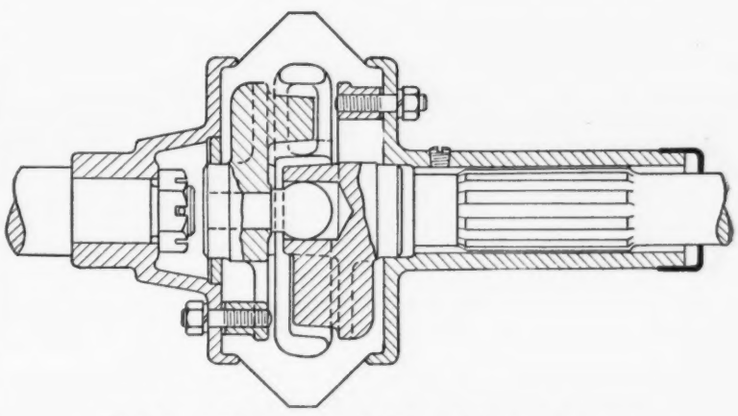
The AC Spark Plug Co., Flint, Mich., displayed a mechanically-operated device for pumping gasoline from the supply tank to the carburetor. The pumping action is secured by the movement of a mechanically-actuated diaphragm, and it is stated that this action is proportioned automatically to the requirements of the moment. Incorporated in the design is an AC gasoline cleaner, which prevents the entrance of any foreign matter into the pump.

A new shock absorber development, called the "anti-preloading brake," was shown by the Gabriel Snubber Mfg. Co., Cleveland, Ohio. The brake is incorporated in the snubber so that when the car strikes a bump and the car springs compress, the snubber belt recedes into the cup and releases the brake. The anti-preloading brake does not allow the snubber coils to operate until the car springs deflect beyond certain limits. When the springs do deflect beyond this limit the internal coil compression spring expands, instantly taking up the slack in the belt. When the rebound of the car springs starts, the coils of the belt immediately tighten, creating friction on the multiple coils and gradually increasing the brake action, allowing the car springs to return to normal position without jerk or abrupt stop.

The Beneke Mfg. Co., Twenty-first and Rockwell Sts., Chicago, had a thermostat which, instead of a bellows, uses a wafer diaphragm. This is designed for installation in the hose connection between the radiator and the engine and is set to operate at from 145 to 175 deg. Fahr. It is housed in an aluminum shell and weighs 14 oz. This company also announced a change in design in its carburetor which permits the float chamber to be placed in either of two positions.

A rubber universal joint with steel jaws to take the strain of severe torque was exhibited by the Sheldon Axle & Spring Co., Wilkes-Barre, Pa. This is offered for use both as original equipment and for replacement. Externally it has the appearance of a disk beveled on both sides. Attaching studs are held in steel disks molded in the composite rubber. Integral with each of these disks are three jaws which intermesh and which only come into contact under sudden and severe torque. For purposes of alignment, a ball and socket is incorporated in the design, the ball being a part of one plate while the socket is integral with the other.

Landis Engineering & Mfg. Co., Waynesboro, Pa., showed a hydraulic shock absorber known as the Landis Shock Diffuser. In principle it is stated to resemble the usual form of hydraulic absorber excepting that the by-pass and inlet are always submerged in oil. By this means no air can get into the working cylinder. The resistance is said to be always in proportion to the load and acts without any lag.



Sheldon rubber universal joint with steel jaws to take strain of severe torque

Shop Equipment Campaign Opens With Show Exhibit

Nation-wide effort to promote more extensive use of modern service station tools starts in New York. For special benefit of trade, but public also interested.

By Donald Blanchard

A NATION-WIDE campaign to promote the more extensive use of shop equipment in the country's more than 80,000 maintenance establishments was launched with the opening of the New York National Automobile Show. Backed as it is by a united industry, this campaign is concrete evidence that the automobile business recognizes maintenance as one of its outstanding problems.

Housed in Grand Central Palace and occupying approximately one-third of an entire floor is one of the most comprehensive exhibitions of shop equipment ever staged. The showing has been made even more impressive by segregating the equipment displays in one section of the show instead of scattering them among the accessory and parts exhibits as has been the practice in the past.

The present shop equipment exhibit and the ones that will follow it in Chicago, Philadelphia, Baltimore, Detroit, Cleveland, Cincinnati, Buffalo, Milwaukee, St. Louis, Boston, Kansas City, Los Angeles and other cities, are designed, of course, primarily for the educational effect they will have on the trade. Strenuous efforts are being made to get dealers and their service men to attend and it was quite evident on opening day at New York that these efforts are bearing fruit, for a large percentage of those visiting the shop equipment section were very plainly of the trade.

Heavy Trade Attendance Expected

With the beginning that was made, exhibitors were quite confident that the trade in the metropolitan territory would attend in large numbers, particularly in view of the fact that the shop equipment section was to be closed to the general public each day until 3 p. m. This provision gave the service man an opportunity to inspect and to learn the possibilities of the equipment on view that would have been impossible otherwise. It seems probable, however, that the shop equipment exhibit would have been even more effective if the division between it and the parts and accessory displays had been more pronounced and if there had been a larger number of action displays such as made the booths of some manufacturers the centers of attention. Of course, there are practical difficulties operating against both of these suggestions but their importance cannot be overlooked.

Although the shop equipment exhibit was aimed at the trade particularly, there is no doubt that it had a salutary effect on the public in general. It represents a very definite and impressive demonstration of the brains and engineering genius that are being put into the design and construction of specialized equipment for the service station to the end that the car owner may get work of higher quality at lower cost. Something of this character has been needed to show the public the complexity of the automotive service problem and the serious endeavors that are being made to cope with it.

Undoubtedly service will gain in the estimation of the public as a result of this exhibit at New York and of the similar displays to be held in most of the important cities of the country.

Problems Same as Manufacturers'

A survey of the equipment on display shows that the problems of automotive service are in general quite similar to those which have faced the vehicle manufacturers. Most of the machinery and tools fall quite naturally under the following headings: Material handling, inspection and test, cutting tools, tools for disassembly and assembly, and auxiliary equipment.

Under the last heading may be grouped compressors, car washers and paint sprayers. Pressure washing equipment is largely a development of the last year or two and judging by the amount of this equipment on exhibition, it is meeting with a favorable reception by the trade.

The practically universal adoption of lacquer finishes has opened up a new field of automotive service and there is no doubt that more and more refinishing work will tend toward the automotive maintenance establishment rather than to the highly specialized body painter. Already the equipment for doing this work has gained quite wide distribution among car dealers and general repair shops, and consequently shop equipment manufacturers are providing apparatus to meet this demand.

Inasmuch as engine repairs and adjustments form a major portion of the work of the typical shop, it is natural to expect that equipment for this work should be well represented at the show. Particular attention has been paid to carbon and valve operations as these are most commonly encountered and there are numerous displays of accomplishments in this field which speed up the work and improve its precision and quality.

With the widespread adoption of the flat rate system and the rapidly growing use of piece-work compensation to mechanics, a very pressing need has arisen for equipment to facilitate correct diagnosis and to test the

quality of the work done. This condition is reflected in the large number of testing and inspection devices on display.

Utilization of unskilled labor presents an even more difficult problem in the service field than it does to the manufacturer. There are not sufficient trained mechanics to go around and maintenance men are placing more and more dependence on equipment that will produce satisfactory results with available labor. Moreover, the service station must compete against other industries for its men and shop equipment that will permit a greater output per hour of labor, and consequently higher wages, is providing the answer in many cases. From the equipment on display, it is evident that its manufacturers are cognizant of this condition and that they are aiming not only at faster work but also at simpler operation.

Where it is possible to do so, the tendency of design is toward simplification and increasing the scope of work done. At the same time every effort is being made to reduce costs as it is recognized that each item of equipment must justify itself economically and that the average service station is able to make only a limited investment in equipment. In this connection, it might be mentioned that the larger and more expensive items may be purchased on the time-payment plan.

How the Salesmen *Impressed* a *Pseudo*-Buyer at the Show

Some approaches were good, some were bad, and sometimes there wasn't any. Lamentable ignorance of f. o. b. prices.

By John Cleary

IN an effort to learn how an individual prospect was handled by the salesmen at the show, I walked through the exhibits in the guise of a buyer. My experiences were interesting and diversified.

There were good approaches, some not so good, and entirely too many instances of no approach at all.

Most of the salesmen knew the New York delivery prices of their cars. Those who had not memorized these prices were able to answer questions by referring to a printed or typewritten price sheet or a memorandum book. There was one exception to this. I came across a salesman who did not know the prices and had no price list. He left me while he borrowed a list from another salesman.

I encountered a lamentable ignorance of the f. o. b. factory list prices.

And, as a corollary to this, I was too often made to feel that the salesman resented having his time taken up—or wasted—by an out-of-towner. This happened so frequently that it was genuinely refreshing to meet and talk with the other type of salesman, who treated me as graciously and courteously as he would a prospect to whom a sale would result in a commission for him.

Two phases of automobile selling today, brought out in my tour of the show booths, proved most encouraging. One was the knowledge possessed by the salesmen in general of the engineering and construction details of their cars, and the enthusiasm with which they described them, as well as performance features, to the prospect. The other was the apparently universal disinclination to discuss competitive cars detrimentally.

Not a single instance of "knocking" came to my attention.

On the other hand, it was a disappointment to note that only a very few salesmen made any effort to turn our conversation into the direction of a sale. Most of them seemed satisfied just to inform me of the merits of their cars.

Even when I became interested and let the salesman know it, he did not, in most cases, follow up his advantage as intensively as I expected he would.

As a matter of cold statistics, I "exposed" myself to the exercise of salesmanship in every booth at the show, and my name and address were only asked for twice.

The outstanding example of good salesmanship occurred in the booth of a medium-priced car manufacturer. Coming in from lunch, apparently, the salesman found three visitors, of whom I was one, and saw that we were not getting any attention. He did not wait to take off his hat, coat and muffler, but sailed right in.

He selected one of the trio to work on, but raised his voice sufficiently to let the other two of us listen in on his sales talk. This was good strategy. The booth was crowded. The other salesmen were busy. If he had not counted us in, when he started talking to the first prospect, we should most likely have made our way to another display. As it was, he succeeded in holding all three of us, strangers to him and to one another, and contrived to make a presentation to each one of us, individually, before we left.

One of the other men was a genuine prospect. He made an appointment for a ride in a five-passenger sedan. When I passed this booth, more than an hour later, the salesman was still working in his hat and coat.

At the other extreme was the salesman who, in answer to my leading question about the model he had been showing to someone, looked at me blankly and said "Where did that damn Bob go?" and then abruptly turned from me to seek the lost Bob, who was probably one of the company's attendants at the booth. My question still remains unanswered.

There were no less than 12 booths where I was completely ignored by the salesmen. In some of these, all the salesmen were busy when I entered, but I always waited until one was disengaged, "exposed" myself to him by looking at one of the cars from several angles, opening a door and so on, waiting for him to make the first move. He never made it, but allowed me to leave without his having contact with me.

This happened also in the remainder of the dozen instances, when there were salesmen standing around doing nothing. In all these cases, the salesmen stayed away from me so studiously that I came to the conclusion they were carrying out a company policy.

Perhaps there is a gratification for a policy of allowing visitors to browse around a booth entirely unmolested by salesmen. Perhaps there is sales wisdom in insisting that the visitor must start the conversation. But it would seem that many valuable contacts are passed up by such a policy.

I noticed that many other visitors at these booths were permitted to wander in and out among the cars on display and leave without having had conversation with any of the salesmen. It is logical to assume that some of these were real prospects.

On entering a booth, one could almost sense whether or not the salesmen had been given detailed and intelligent instructions how to conduct themselves at the show.

It must have been at a pre-show meeting of instructions that one salesman learned to approach his prospects with the cheery greeting, "Well, how do we agree on the new Blank sedan?" mentioning the particular body style the prospect happened to be examining.

That seemed like a good approach. It always elicited a response. It assumed an interest in the car on the part of the visitor, and the conversation that followed was on an admirable footing from the start.

Not all the exhibitors have learned that it is good business to keep catalogs and sales literature away from the booth. I collected a sheaf of literature from various displays. Still, the number of manufacturers who realize that, next to sales, the compilation of a good mailing list is the most important beneficial result coming out of the shows, is increasing. The two manufacturers who got my name and address will mail me the catalogs I requested, and I have no doubt they will also turn my name over to the dealers in my home town.

Salesmen who quote only the New York delivery prices, and are unacquainted with the factory list prices, are obviously working for companies that regard the New York show as a purely local institution.

It was one such salesman who, in answer to my query about factory list prices, said disgustedly, "Why we can only sell cars to New Yorkers. Aren't you a New Yorker?"

To be sure, there is no percentage for the local salesman in giving his time to a visitor whom he couldn't possibly sell, but how much more sensible seemed the answer of another salesman: "Sure I can give you the factory prices, and I don't care where you live. We are all so enthusiastic over our own line that we are glad to tell about it to anyone who is interested enough to listen."

Over 22,000,000 Motor Vehicles Now Registered in U. S.

(Summary as of Jan. 1, 1927. Compiled by *Automotive Industries*)

	Total	Passenger Cars	Trucks		Total	Passenger Cars	Trucks
Alabama	225,681	197,671	28,010	Nevada	24,014	19,300	4,714
Arizona	73,574	63,500	10,074	New Hampshire	89,001	78,400	10,601
Arkansas	209,419	179,480	29,939	New Jersey	651,729	520,423	131,306
California	1,600,171	1,383,878	216,293	New Mexico	54,341	52,111	2,230
Colorado	252,787	232,350	20,437	New York	1,816,434	1,461,629	354,805
Connecticut	280,800	238,700	42,100	North Carolina	385,763	352,217	33,546
Delaware	44,418	36,246	8,172	North Dakota	157,822	145,571	12,251
District of Col.	129,792	115,633	14,159	Ohio	1,510,000	1,325,000	185,000
Florida	416,930	346,492	70,438	Oklahoma	510,000	460,000	50,000
Georgia	278,051	242,358	35,693	Oregon	234,125	215,824	18,301
Idaho	95,500	86,500	9,000	Pennsylvania	1,438,303	1,250,356	187,947
Illinois	1,375,206	1,199,717	175,489	Rhode Island	109,145	89,832	19,313
Indiana	772,910	664,887	108,023	South Carolina	180,967	163,368	17,599
Iowa	689,036	639,457	49,579	South Dakota	168,230	153,840	14,390
Kansas	491,276	441,373	49,903	Tennessee	276,097	251,104	24,993
Kentucky	278,337	249,412	28,925	Texas	1,047,202	938,732	108,470
Louisiana	238,000	202,100	35,900	Utah	81,633	69,133	12,500
Maine	143,616	121,333	22,283	Vermont	73,863	68,231	5,632
Maryland	249,056	236,680	12,376	Virginia	321,879	271,000	50,879
Massachusetts	701,224	609,539	91,685	Washington	361,775	308,237	53,538
Michigan	1,119,973	970,880	149,093	West Virginia	221,001	194,620	26,381
Minnesota	624,478	552,944	71,534	Wisconsin	662,282	581,441	80,841
Mississippi	210,500	189,000	21,500	Wyoming	49,633	44,108	5,525
Missouri	651,350	586,134	65,216				
Montana	103,946	88,828	15,118				
Nebraska	361,945	333,874	28,071	Total	22,043,215	19,223,443	2,819,772

EDITORIAL

The Factory and the Used Car

SCANNING the business horizon at the New York show, one found that used cars loomed large as an unfavorable factor in the outlook. "Still the greatest problem before the industry," is the way one prominent factory executive summed it up. The views of this particular executive are perhaps of special value because he scored one of the conspicuous sales successes of 1926.

"We sold 200,000 more cars in 1926 than in 1925," he said, "for the reason that our dealers were able to sell 200,000 more used cars. The ability of a dealer to sell new cars is measured by his ability to keep his used car stocks moving. Nearly every new car sale involves a trade-in and the dealer that can keep his floors reasonably clear of traded-in stock is always in a position to make new trades. He never has to pass up a sale. We look upon the used car as a factory problem and our sales promotion department gives just as much attention to used car merchandising as to new car sales."

It seems inevitable that the whole industry sooner or later must take the used car problem to the factory for solution, instead of leaving the individual dealer to cope with it as best he can. Cooperation and coordination have brought fine results where thus far applied.

Rubber in Car Construction

IN recent years many new uses have been found for rubber in automobile production, and there are good reasons for believing that the applications of this material will be developed still farther.

In the days of low-speed engines and rough roads most of the shocks experienced by motorists resulted from road obstacles, and even then the most effective shock absorber was a rubber product—the pneumatic tire. With the increase in engine speeds and the improvement in roads there has been a shifting of the relative importance of sources of vibration, and today various unpleasant forms of roughness and noise have their origin in the engine. In the four-cylinder type we have the unbalanced secondary force and in engines with more than four cylinders we often have torsional vibration at certain critical speeds. The occupants of the car know of the existence of these vibrations only through their transmission to the chassis and thence to the body, and if such transmission can be prevented the actual engine vibration becomes much less objectionable.

It is for this reason that rubber cushions are now widely used for engine supports, rubber or rubberized fabric spring connections are coming into use, rubber centers are inserted in clutches to prevent the transmission of irregularities in crankshaft torque, and rubber cushions are placed in the propeller shaft connection to prevent the transmission of irregularities in the torque impressed on that part. Even the steering gear is now in some cases provided with a flexible member of rubber or rubberized fabric to protect the hands and arms of the driver against road shock.

Truck Dealer is Important

THERE'S a very important man behind the truck branch; he is the truck dealer.

Smoking car analysts of the truck merchandising situation are prone to say that practically all truck selling among companies other than those making light delivery vehicles is done through branches. "Oh, a few dealers here and there, perhaps; but the only way to sell trucks really is through branches."

Strangely some important truck company branch managers don't think that way at all. A number of these men on the firing line recently interviewed were unanimous in asserting competent dealer representation outside of large towns to be essential to efficient coverage of their sales territory.

Sometimes, even when factory officials stated that they sell almost altogether through branches, branch managers are found praising highly the results obtained by existing dealers and eager to increase the number of retail outlets. The branch executives seem to be feeling more strongly as time goes on the need for continuous contact with owners and prospects; such contact, they know, cannot be maintained by a branch house salesman in outlying districts. Adequate service at the customer's elbow, moreover, becomes more of a necessity every year, and here again, many branch managers say, proper dealer representation is the logical answer.

Survey of some typical cases investigated indicates, too, that the number of dealers in a given territory, frequently varies almost directly with the general efficiency of the branch marketing setup. Where the branch itself lists full information about prospects, checks carefully salesmen's follow-up, sets quotas intelligently and generally operates its marketing on a progressive basis, good coverage of outlying territory by competent dealers almost always exists. This synchronization doesn't necessarily follow the existence of either of the two conditions mentioned, but it seems a natural and not surprising result of a single attitude of mind functioning on two phases of the truck marketing problem.

AUTOMOTIVE NEWS SECTION INDUSTRIES

Philadelphia, Pennsylvania

Saturday, January 15, 1927

Show Developments Indicate Early Capacity Operations

NEW YORK, Jan. 15—Developments of the week at the New York automobile show were all favorable to an early resumption of large scale manufacturing. Dealers attended the show in probably larger numbers than ever before, and despite reports of generally large stocks, there was a large volume of wholesale buying.

In more instances than was anticipated, dealers were practically clear of new cars owing to factories bringing out new models. Included among these were several of the largest producers whose plans are for practically capacity operation from the start of the year. This heavy manufacturing on the part of even a limited number of companies, with the fair schedules of most others, will bring total operations for the industry high.

The interest of show goers in the 1927 cars was possibly more pronounced than at any former show. This interest coupled with the generally prosperous condition of the country, and the promise of good general business through the year, caused automotive leaders to feel that 1927 will deal as kindly with them as the year just closed.

Chevrolet to Pay for Scrapping Cars

NEW YORK, Jan. 14—R. H. Grant, general sales manager of Chevrolet Motor Co. announced a national used car disposal plan this week under which dealers will receive $50 as a flat allowance on all Chevrolet cars completely scrapped. This money will be paid from a fund created by setting aside a credit of $5 on each new car taken by each dealer.

The cars are to be scrapped by destroying vital parts in presence of a factory representative. This will not only take the car off the market but preclude sale of used parts. Dealers may save tires and batteries.

When the fund increases other makes of cars will be included at an allowance of $35 each. The plan is effective as of Jan. 1.

The company will spend $800,000 in an aggressive used car advertising and merchandising campaign in 1927.

Buick 1926 Sales, 254,356

DETROIT, Jan. 10—Buick Motor Co. dealers delivered 254,356 cars at retail in 1926, as against 200,041 in 1925, the highest previous year, and 168,920 in 1924. In the five months since Aug. 1, 1926, when the latest model was shown, the company has delivered 109,088 cars.

Industry is Told Problems Abroad

NEW YORK, Jan. 12—The site of the next World Motor Transport Congress remained somewhat undecided as the Third World Motor Transport Congress closed here yesterday. Delegates from Great Britain, Germany and one or two other countries expressed the wish that future congresses might come to their countries, but formal invitations, upon which official action could be taken, were not presented.

Nearly 150 foreign delegates and visitors attended this Third Congress held under the auspices of the National Automobile Chamber of Commerce. Practically every motor vehicle-using country in the world was represented. Important executives of the American automotive industry discussed for the foreign visitors such topics as motor transportation development, highways, trade practices, public relations and automobile financing. Several overseas delegates also presented papers outlining the problems of motor vehicle development in their respective nations. Among these were Col. J. Sealy Clarke, Great Britain; Tybor Haltenberger, Budapest Motor Bus Co.; J. Chilton, Motor Agents Association of Great Britain; J. T. Romanas, secretary, Lithuanian Automobile Club, and Ernesto V. Duperly, Bogota, Columbia.

American executives on the program included John N. Willys, Edward S. Jordan, R. H. Grant, A. R. Erskine, Charles Clifton, J. Walter Drake, E. G. Wilmer, Cyrus McCormick, Jr., T. H. MacDonald, E. T. Strong, W. L. Colt, H. M. Jewett, J. A. Ritchie, H. H. Rice and R. E. Olds.

Palace to be Available

NEW YORK, Jan. 11—Despite sale of the Grand Central Palace to Spanish-American interests, who will make it their headquarters in New York, it appears certain that next year's show will be held in the Palace. It is the understanding of the show management that the four floors used for exhibition will be still available.

$3,695,570 IN ORDERS IN THREE MINUTES

NEW YORK, Jan. 11—Within a period of 2 minutes, 48 3/5 seconds, caught by a split-second stop-watch, firm orders were placed for 2200 Hupmobiles (sixes and eights) totaling $3,695,570, at a meeting of the company's metropolitan dealers on the opening day of the show.

Approximately 150 dealers were represented.

Preceding the placing of the orders, addresses were made by Dubois Young, president; R. S. Cole, general sales manager; Frederick Dickinson, advertising and assistant sales manager, all of the Hupp Motor Car Corp., and T. B. Van Alstyne, New York Hupmobile distributor.

Nash Sees 1927 Business Exceeding Former Year

NEW YORK, Jan. 12—Before the New York automobile show luncheon of the Warren Nash Corporation, C. W. Nash, president of Nash Motors Co., said that he believed that the Nash manufacturing and distributing organizations will be able to produce and sell more automobiles in 1927 than in 1926, although he felt that total production and sales of the industry for the year might be somewhat less than last year. It was Mr. Nash's opinion, however, that business conditions generally are such that there should not be any great recession this year. He told dealers, distributors and salesmen to the number of 800 assembled at the Pennsylvania Hotel how the Nash company is constantly striving to keep its product in quality and style just a little ahead of the other fellows.

Continental Shows "Eight"

NEW YORK, Jan. 10—The Continental Motors Corp. exhibited a new eight-cylinder engine with single sleeve valves, in a sectioned model. The engine has a bore of 2¾, and a stroke of 4⅛ in., and gives 60 hp. at 2800 r.p.m. Its compression ratio is 5 to 1. Four-point support on the frame is provided for by steel pressings which fit in between the crankcase and flywheel housing and between the crankcase and timing gear case, respectively. A Lanchester vibration damper is fitted. In most details the design is similar to that of the six-cylinder single sleeve valve engine first developed by Continental and described in these columns in the issue of March 25 last.

Prices Hold Firm at Former Levels

Reductions by Star Clear Low Price Range—New Model Lists Attractive

NEW YORK, Jan. 15—Prices held firmly to established levels at the New York show. A reduction by Star of $20 to $50 on its four and six-cylinder models was to conform to new prices established in their price ranges by new models. In no case was there any reduction which might be regarded as signaling a possible general revision in any price class.

The only price on the new Peerless "60" line announced this week is on the five-passenger sedan which lists at $1345. This will be the highest priced car in the new line.

The price developments of the show follow:

Buick

Town brougham 115	$1375

Star

Four-cylinder	New	Old
Touring	$550	$550
Roadster	550	550
Coupe	650	675
Sedan	765	695
Coach	675	795
Chassis	470	...
Six-cylinder		
Touring	725	725
Sport roadster	885	910
Coupe	795	820
Coach	845	880
Sedan	925	975
Landau	975	995
Sport coupe	975	995
Chassis	650	...
Compound fleetruck	950	...

Reo

Roadster	Not set
2-pass. coupe	$1620
Coupe	1845
Sedan	1845
Brougham	1595

Hupp

A-1 5-pass. brougham	$1385

Chandler

(Royal 8)	
Roadster	$2195
4-pass. coupe	2195
5-pass. sedan	2195
7-pass. sedan	2295

Kissel

	6-55	8-65	8-75
Brougham, 2-door, 5-p...	$1695	$1895	$2195
Brougham, 2-door, sp'l..	1795	1995	2295
Brougham sedan, 4-dr...	1895	2095	2395
Coupe roadster	1895	2095	2395
All-year brougham	2295	2495	2795
Speedster, 4-pass.	1895	2095	2395
Phaeton	1685	1885	2185
Brougham sedan sp'l....	2095	2295	2595
7-pass. sedan	2295	2495	2795
7-pass. touring	1785	1985	2285
Tourster	1895	2095	2395

Hudson-Essex

Essex coach	$735
Essex coupe	735
Essex sedan	785
Essex sedan	*795
Standard Hudson coach	$1285
Standard 5-pass. sedan	1385
Custom-built brougham	1575
Custom-built 5-pass. sedan	1750
Custom-built 7-pass. sedan	1850

*With chair seat for the Pullman type front seat.

Chrysler

	New	Old
Landau sedan (50)	$885	new m.
Spec. coupe (60)	1245	"
Cabriolet (70)	1745	"
Coupe (70)	1595	"
Coupe (80)	3095	"
Sedan (80)	2675	"

Locomobile

Sedan (8-80)	2850	new m.
Roadster (Jr. 8)	1895	$2150
Sedan (Jr. 8)	1895	2285
Brougham (Jr. 8)	1895	2285
Sportif (90)	5900	5500

Franklin

Tandem sport	3190	new m.
Con. Coupe	2900	"

Stutz AA

DeL. cab. coupe	3995	4170
DeL. 2-p. speedster	3345	new m.
DeL. 4-p. speedster	3260	"
DeL. lan. sedan	3470	"
Std. lan. sedan	3345	"

Rim Production 1,798,236 Lower

CLEVELAND, Jan. 10—There were 1,798,236 less rims produced in 1926 than in 1925, according to the report for the year submitted by the Tire & Rim Association of America. Production for December fell off 511,130, the totals being 1,096,429 for December, 1926, as against 1,607,559 the previous year.

In 1926 balloons were 78.8 per cent of the total output and in 1925, 66.8 per cent.

The year's production in principal sizes was as follows:

Clincher	1926	1925
30 x 3½	2,562,763	4,997,398
Balloon		
28 x 3½	10,126,657	8,643,872
28 x 4	3,666,326	2,946,538
29 x 4	2,036,736	1,639,874
30 x 4½	1,682,419	1,628,419
30 x 5	243,071	402,899
31 x 5	401,829	464,143
High Press		
30 x 3½	191,342	616,683
32 x 4	185,557	316,147
32 x 4½	429,304	637,800
Truck "20"		
30 x 5	1,006,206	840,768
Truck "24"		
34 x 5	49,847	109,871
36 x 6	73,798	75,309

Aluminum Industries Buys Anderson Scrap Process

CINCINNATI, Jan. 10—The sale of rights to use a new process for the recovery of scrap aluminum was made today by Dr. Robert J. Anderson, specialist on the metallurgy of aluminum, to Aluminum Industries, Inc., Cincinnati, producers of secondary aluminum and aluminum alloys.

Business in Brief

Written exclusively for* AUTOMOTIVE INDUSTRIES *by the Guaranty Trust Co., second largest bank in America.

NEW YORK, Jan. 15—Trade was in relatively small volume last week, the effects of inventory taking and the customary seasonal recession having been intensified by unfavorable weather in a number of sections. Commodity prices in general continued to decline, while stock prices moved irregularly and bond prices were consistently strong. Money rates were considerably below the level of the preceding week.

FREIGHT CAR LOADINGS

Car loadings during the week ended Dec. 25 numbered 772,590, as compared with 950,575 in the preceding week and 701,061 in the corresponding period of 1925. The year's total amounts to 53,309,644 cars, which compares with 51,224,152 cars in 1925 and 48,534,433 cars in 1924.

BANK DEBITS

Bank debits to individual accounts reported to the Federal Reserve Board for the week ended Jan. 5 were 36.5 per cent larger than the total for the preceding week and 10.4 per cent above that for the corresponding period last year.

FISHER'S INDEX

Fisher's index of wholesale commodity prices stood at 145.9 last week, as against 146.1 a week earlier and 149 four weeks earlier.

FEDERAL RESERVE BANK

Bills and securities held by the Federal Reserve banks declined $69,700,000 during the week ended Jan. 5, with decreases of $77,400,000 in discounts and $3,300,000 in holdings of Government securities and a gain of $10,000,000 in open market purchases. Note circulation declined $44,300,000, while deposits increased $63,600,000 and reserves $54,000,000. The reserve ratio rose from 70.1 to 71.0 per cent.

During the same period, loans of reporting member banks increased $16,000,000, gains of $29,000,000 in loans secured by stocks and bonds and $4,000,000 in loans secured by Government obligations being partially offset by a decline of $17,000,000 in "all other" loans. Investments decreased $53,000,000 and borrowings from the Federal Reserve banks $65,000,000, while net demand deposits rose $137,000,000 and time deposits $66,000,000.

MONEY

Call loan rates ranged from 4¼ to 5 per cent last week, as against 5 to 6 per cent in the preceding week. Rates on time loans were also lower at 4½ to 4⅝ per cent, as against 4⅝ to 4¾ per cent, and commercial paper rates at 4 to 4½ per cent as against 4¼ to 4¾ per cent.

Canadian Makers Drop Association

Plan Separate Organizations for Car and Parts Companies in Future Activity

TORONTO, Jan. 10—Automotive Industries, the association of car manufacturers and parts manufacturers, has been dissolved. This was preceded by the withdrawal of five of the car manufacturers—General Motors of Canada, Ltd., Dodge Brothers of Canada, Ltd., Durant Motors of Canada, Ltd., Chrysler Corp. of Canada, Ltd., and the Studebaker Corp. of Canada, Ltd. This left only two car manufacturer members—Willys-Overland, Ltd., and the Ford Motor Co. of Canada, Ltd.

At the annual meeting held subsequent to this action it was decided to dissolve the association and a committee was appointed to administer the funds.

Two new associations are growing out of the membership of Automotive Industries. The car manufacturers have formed an association to be known as Automobile Manufacturers & Exporters, headed by John D. Mansfield of the Chrysler Corp. of Canada. It is the intention of the new association to engage a manager.

The parts manufacturers are also planning an association to include all those manufacturers who are supplying parts, materials and equipment for the car manufacturers.

Canada Would Add British-Made Parts

MONTREAL, Jan. 11 — Canadian automobile manufacturers, determined to enlarge their market by profiting more from tariff preference accorded Empire-made goods, are planning to increase the British-made content in their cars, according to information reaching trade circles here. The report is causing more than ordinary interest because some think the move may presage for Canada a share in the fight for world car markets, which is reported in the offing through consolidation of a number of American firms with a view to attaining or maintaining a strangle hold on British and foreign fields in the face of stiff competition which manufacturers in Great Britain are creating.

Seek Better Organization

Toronto, according to the information received here, is in the center of a reorganizing movement among Canadian car manufacturers which has as its object the provision of means whereby Canadian firms will be able to operate and, if necessary, fight as a solid trade unit. It is declared that the Canadian automotive association, hitherto the welding agency of Canadian car and parts firms, will be revamped, probably with the car manufacturers forming their own association, and the parts men continuing their organization.

All of the car manufacturers, with the exception of two, are said to be interested. They, it appears, stand aside because their export problems are not the same as those of their trade colleagues. It is the export business which is the main cause of the new scheme, Montreal hears. The Canadian manufacturers, casting their business eyes over the Empire, find their Empire markets more restricted than they would wish at present, because some of the Dominions demand such a heavy British-made content in the cars which are to enter under the British preference. New Zealand, for instance, is outstanding with a requirement of over 70 per cent.

One (and for the time being the main) consideration of the new car makers association, it is reported, would be immediately to study the possibility of increasing the British-made content in Canadian cars by discontinuing use of American accessories and fittings and replacing them with British-made goods, if Canada does not produce them. Such accessories as headlights, fenders, etc., are mentioned in this connection. The feasibility of putting more Canadian steel into the cars, too, is said to be one of the matters broached.

British Makers Active

The object of the association which is known as Automobile Manufacturers & Exporters, with John D. Mansfield, of the Chrysler Corp. of Canada, Ltd., as president, would be to represent the Canadian automobile manufacturing industry in all circumstances requiring collective action.

The extent to which Canada could participate in the world demand by using every Empire preferential tariff is not under-estimated. Sales experts hold that the Dominion could constitute a formidable competitor against any foreign combine, even one as strong as the American consolidation foreshadowed a few days ago in London cables. That the time has come for Canada to make some strenuous move is certain, the automobile men say, partly because of the intensive drive for business in and out of the Empire which makers in Great Britain are staging with several light cars which are proving popular.

SEAGRAVE TO TRY 200 MILES AN HOUR

NEW YORK, Jan. 10—Major H. O. Seagrave, English racing driver, will attempt to set up a speed of 200 miles an hour in a specially designed Sunbeam racer in Florida during February. The car was designed by Louis Coatelen and is said to embody a number of novel features which are being guarded. It is of 1000 hp. and has been fitted with special tires developed after several months' research.

Mexican Imports Decrease in 1926

Marked Improvement Expected With Clarifying of Present Political Situation

LAREDO, TEX., Jan. 10—Not as many automobiles of American manufacture were exported to Mexico during 1926 as there were during the previous year, according to incomplete figures compiled here. Total shipments through Laredo last year were approximately 8000 automobiles. This was more than 1000 less than in 1925, it is stated. Reports from Tampico, Brownsville, El Paso and other ports of entry are lacking but it is estimated that the exports through them did not exceed 6000 cars, which would make a total of 14,000.

It is expected that as soon as political conditions in Mexico are clarified there will be a marked improvement in the automobile trade. The boycott which was instituted as a protest against the administration of President Plutarco Elias Calles had a marked effect in decreasing the sales of automobiles, it is explained. It was indicated for a time that the construction of modern highways in Mexico would stimulate the sales of cars, but the program of road building which was started with such a flourish has been allowed to languish until little work of that kind is being done at this time.

Canada Shows 100,000 More

WASHINGTON, Jan. 10—The Canadian public on Jan. 1 was operating approximately 100,000 more motor vehicles than on Jan. 1, 1926, according to an announcement this week by the U. S. Department of Commerce. The estimated number in operation Jan. 1 was 828,096, as compared with 727,594 on Jan. 1, 1926. This year's figure includes 733,764 passenger cars, 1503 motor buses, 84,953 trucks and 7876 motorcycles.

Rumania Seeks Credits

WASHINGTON, Jan. 14—American made automobiles are facing increasing competition in Rumania from European makes because of scarcity of money and the favorable credit terms extended by European manufacturers, it was announced here this week by the U. S. Department of Commerce. Formation of a Rumanian automobile finance corporation has been suggested by a former official of the Rumanian Ministry.

Morris Gets 10,000 Order

WASHINGTON, Jan. 11.—Morris Motors, Ltd., of London, has been awarded a contract for 10,000 cars and trucks, totaling $15,000,000, from an Australian firm, it was announced here this week by the U. S. Department of Commerce. The shipments are to be made during 1927.

LEADERS OPTIMISTIC ON 1927 BUSINESS

(Continued from page 39)

C. H. Bliss, Nash Motors Co.: I doubt that the industry as a whole will produce more cars in 1927 than in 1926, although the Nash organization expects to better its 1926 record by a good margin. Besides a constantly growing Nash business in this country, Nash is just beginning to get into the foreign field in an intensive way, so that gains in our export sales next year are practically certain. Total number of used cars in the hands of Nash dealers is slightly larger than at this time last year, but in relation to the volume of business handled and the number of dealers in the organization these stocks probably are lower than a year ago.

Colin Campbell, Vice-President, Durant Motors, Inc.: We plan for an early start on a large manufacturing schedule. Star dealers had an average of not more than four new cars and six used cars in December, a condition which will bring an immediate demand for shipments. I am not prepared to furnish any estimates on the extent of the 1927 market, but am certain that Star will increase its business over 1926. The company has developed its dealer organization very satisfactorily in the smaller cities and will turn its attention to building up a strong organization in the larger cities. By concentration of its manufacturing and general activities at the Elizabeth plant, the Durant organization generally is entering 1927 on a stronger basis than in any former year.

Paul G. Hoffman, Vice-President, Studebaker Corp. of America: Based on the reception accorded the new Erskine Six at the Paris and London automobile shows, and at New York, we estimate that 8000 of the new small cars will be produced during the first quarter of the current year. This is in addition to the 30,000 production schedule set for the regular Studebaker line. Studebaker's objective, for all cars, has been set by President Erskine at 200,000 for 1927. With our physical plant improved and expanded, our research department and proving grounds now being completed, and with new plans laid for assisting our dealers with a new sales course and a new flat rate and piece work manual, we are confident we will be able to attain the goal set by Mr. Erskine. We believe the outlook for motor car sales in the farming sections will continue moderate and that the biggest demand will be in the industrial sections. With regard to stocks of new cars on hand, we estimate that Studebaker dealers are 18 per cent below the normal average for this time of year.

F. E. Moskovics, President, Stutz Motor Car Co. of America, Inc.:

"It is my belief that 1927 is going to show us a year of substantial, steady business in the automotive industry, no boom, but 12 months of good, healthy business. No production records are going to be broken but some individual companies will show very definite gains. We anticipate a 20 per cent gain in sales for our company over 1926. Our dealers are entering the new year with very low stocks of new cars.

"In a specialized line such as ours the used car is not a 'problem' but under the highly competitive conditions which now exist, and will continue to exist during this year, I do not see how the used car can become any less of a problem to the industry as a whole.

"Prices are pretty well stabilized in the field of which we are a part, and I do not look for any radical changes but the trend toward lower unit profits for the manufacturer will continue.

"We look forward to a splendid export business during 1927."

B. F. Everitt, President, Rickenbacker Motor Car Co.: Plans are working out for an early adjustment of our affairs. Under these plans, which may be announced immediately following the New York show, the receivership will be cleared and the company will proceed on a schedule of 6000 cars in 1927. The plans of the company provide for meeting dealer problems which the company encountered in 1926. The forthcoming developments will provide ample working capital and place the company in strong position. The industry will enjoy good business in 1927 and prices will remain about the same. Unit profits as now fixed are approximately right. Going into the new year, General Motors is unquestionably in the driver's seat. Should the corporation continue to maintain the strength shown in 1926 it is almost certain that it will compel the consolidation of other companies now operating independently. Larger producers will find consolidations most advisable and there is very good possibility that several combinations will be made during the year.

Walter C. Davis, Secretary-Treasurer, George W. Davis Motor Car Co.: The general business outlook for 1927 is favorable, although I do not think the industry will produce any more cars than in 1926. In fact total production may be under the 1926 figure. At the present time the country is capable of absorbing just so many new cars and if the required quantity is produced during the first seven or eight or nine months of the year manufacturing must necessarily be curtailed during the remaining months. That is the reason for the lull that was noticeable during the last several months of 1926. New car stocks in general are not too high. Used cars constitute the usual problem, but I would not describe the situation as serious. Car prices are not likely to undergo material reduction this year. The records show that many companies which produced more cars last year than ever before failed to make as much money as in 1925. Prices in some instances have already been cut to the point where it is difficult to get a satisfactory profit.

R. H. Faulkner, Vice-President and Director of Sales, Auburn Automobile Co.: Auburn is aiming to produce in excess of 20,000 cars during 1927, basing our estimates of prospects on 12 months of steady growth during 1926 and a rapid growth in the Auburn dealer organization. Output by the industry as a whole will not be in excess of the 1926 figure and it may even be a bit less. Auburn export sales are increasing steadily.

F. T. Larson, Sales Manager, F. B. Stearns Co.: I doubt very much that total production for the industry this year will run ahead of 1926. Our company expects to increase sales due to the increased demand which our new sleeve valve eight should create. At present we find sales better in the manufacturing than in the farming zones. Dealers' stocks of both new and used cars are as satisfactory as could be expected. Our prices seem to be well stabilized and I do not look for any material changes. The export outlook is excellent. We are strengthening our export organization and expect to develop a profitable line of business in foreign markets in 1927. Our production facilities are adequate for our present needs and we are contemplating no extensions this year.

H. C. Teel, Factory Manager and Director, Reo Motor Car Co.: We anticipate a nice increase in business in 1927 as result of the satisfaction of our dealer organization with the new "Flying Cloud" models. Dealers in the eastern section greeted the new cars and prices with enthusiasm at a meeting in the Hotel Astor preceding the show opening and expressed confidence of a big year. Production is likely to be maintained at an even pace. Increases in Reo factory buildings during the year were intended for improved production more than increased output, but the company looks for reasonable increases. Speedwagon and bus business, likewise, is expected to show increases over the very strong business which Reo has enjoyed in these vehicles over the past several years. There is a possibility that the company will go in more extensively for manufacturing bus bodies and truck cabs during 1927.

N. W. Barton, Assistant Sales Manager, Peerless Motor Car Co.: Several motor car executives with whom I have talked predict that 1927 production will be 2 to 10 per cent under 1926. Although I do not look for a recession, I believe the industry faces selling difficulties in the agricultural districts of the Middle West and South. Credit is not flowing freely enough in these regions and an early change in the situation would be an immense help. Dealer stocks of new cars are fairly heavy in some companies and the used car market is unsatisfactory, but good merchandisers will weather the difficulties. Our own organization with the addition of the new line is in splendid shape and in position to continue the large gains we registered in 1926.

R. B. Belknap, McFarlan Motor Corp.: We have reason to believe that McFarlan business will continue at about the same level during 1927 as in 1926, both at home and abroad. The general prosperity of the country is adequate cause for optimism for the manufacturer of a car in the luxury class. The people have more money and those who can afford it are becoming increasingly particular about details in the design of their cars.

W. A. Smith, duPont Motors, Inc.: We expect an output of about 300 cars in 1927. Sales plans call for a steady development, concentrated largely in the East for the present, catering to a more or less specialized class of buyer. We are going ahead in the export, as well as in the domestic, market. The task of the industry from now on is to develop better business rather than more business.

N.A.C.C. Speaker Upholds Time Sales

Dinner Draws Largest Attendance—Chapin Says No Fear of Overproduction

NEW YORK, Jan. 12—The annual banquet last night of the National Automobile Chamber of Commerce in the Hotel Commodore drew the largest attendance in the history of these affairs and many had to be refused tickets. Roy D. Chapin, chairman of the board of Hudson Motor Car Co., acting as toastmaster, declared that although the industry was going through a period of very keen competition there was never less fear of the bogies of overproduction and saturation.

Automobile factories, Mr. Chapin pointed out, are now organized so that they can turn quickly and without serious disturbance if the market fails to meet expectations. In this sense any year is a good year, he said.

Merle Thorpe, editor of the Nation's Business, in the course of a plea to business men not to seek legislation to solve the problems of industry, took occasion to defend instalment selling, pointing out that it was no new principle and that without organized credit the country's business could never have expanded and prospered.

The surprise of the banquet, superseding the decorations of former years by the "inquiring reporter of the Evening Gazette," was an interview with prominent executives commenting on trends in the industry and their competitor products. The reading of the interview drew gusts of laughter as did the humorous talk later by Neal O'Hara.

N.A.D.A. Meeting Draws 500 Dealers

NEW YORK, Jan. 12—At the sales and service meeting of the National Automobile Dealers' Association held at the Hotel Commodore, Monday and Tuesday of the National Automobile Show week, divergent opinions as to the prospects of the industry for 1927 were presented. James Dalton, editor, reviewed the economic factors affecting present business conditions and likely to prevail throughout this year, and predicted that sales of automobiles will be from 5 to 10 per cent less in 1927 than in 1926. Harry M. Jewett, chairman of the board of the Paige-Detroit Motor Car Co., gave the opinion that 1927 will be the greatest year in the industry, and that all conditions are favorable for both dealers and manufacturers to sell more automotive products and make more money.

The meeting of the N. A. D. A., which is an annual affair, was well attended, more than 500 dealers having registered. The first day was devoted to discussion of selling and management problems, and the second day to maintenance with special emphasis on the use of good equipment and flat rates as profit makers.

On the maintenance program, William Gow, manager of the Studebaker service station at Newark, N. J., told of the results that have been accomplished in his organization through the use of flat rates to customers and piece work compensation to mechanics.

Another speaker at the maintenance session was R. W. Proctor of the Black & Decker Mfg. Co., who cited specific examples of how better equipment has helped service establishments to reach a profitable basis.

On the sales and management program the speakers included Harry M. Fancher, accounting expert; Edward Payton, market analyst; Charles B. Warren, president of the N. A. D. A.; Joseph N. Kellerman, sales manager of Hudson-Frampton Co., St. Louis, and Stanley J. Krebs.

REEVES CALLS SHOW BEST IN SIX YEARS

NEW YORK, Jan. 8—"To my mind this is the best national automobile show that has been held in the last five or six years," said Alfred Reeves, general manager of the National Automobile Chamber of Commerce, who declared that all opening day records appear to have been shattered by the 1927 show. In his opinion the keen public interest in the many new motor cars which were exhibited for the first time, was largely responsible for the record attendance.

Cord Tells Dealer Group Greater Profits Ahead

NEW YORK, Jan. 12—The dealers of the country hold in their hands the destinies of the manufacturers, E. L. Cord, president of the Auburn Automobile Co. told 200 Auburn dealers and distributors who gathered at luncheon at the Hotel Commodore here today. "There are greater profits to be made in the automobile business in the future than have been made in the past," Mr. Cord added, pointing to the growing replacement market as an important stabilizing element.

AUSTRALIAN CARS GAIN 72,854 IN 1926

WASHINGTON, Jan. 13—Automobile registrations in Australia during 1926 increased by 72,854 over 1925, according to a report from Trade Commissioner E. G. Babbitt, Sydney, issued by the U. S. Department of Commerce this week. Commercial vehicle registrations increased 42 per cent.

Horning Says Trend Favors Parts Maker

Waukesha President Reelected Head of M. & A. M. A.—Finds 1926 Prosperous

NEW YORK, Jan. 12—H. L. Horning, president of the Waukesha Motor Co., today reelected president of the Motor and Accessory Manufacturers Association at the annual meeting, told members that a trend was decidedly in evidence on the part of some car manufacturers to turn to parts makers for items which they have been making themselves.

He spoke of several important contracts recently concluded and others in contemplation. There seemed, he said, an evident growing recognition of the ability of the parts makers as specialists to make a better article than could be produced under the "one-roof plan," and at less cost.

Mr. Horning said that a greater interest had been shown this year by the trade and public in the automobile show and he said this was apparent in the parts, accessory and shop equipment sections as well as in the new cars and trucks. He regarded this as evidence of a good potential market for the products of the industry this year.

Parts and accessory makers, Mr. Horning declared, had their best year in 1926 in profits and volume, despite recessions in some cases. Much of the prosperity was due to increased productivity per man on the basis of investment and equipment. Vision and planning on the part of managers would bring still further improvement along this line.

Other officers, including M. L. Heminway as general manager, were reelected. Four directors whose terms expired, were also reelected, including Mr. Horning, C. M. Wainwright, president of Diamond Chain & Mfg. Co.; A. H. D. Altree, vice-president of American Bosch Magneto Corp., and E. B. Clark, president, Clark Equipment Co.

The annual banquet, with its usual large attendance and sparkling entertainment, was held at the Hotel Astor.

Bill Opposes Car Rentals

BOSTON, Jan. 10—Motor Vehicle Registrar Frank A. Goodwin has filed a bill in the Massachusetts legislature providing that no owner of an automobile, or his agent, may let for hire an automobile to any person who is not licensed and does not present a certificate from the registrar bearing a photograph of himself, containing a description of himself and bearing the number of his license.

Detroit Buys ACF Buses

DETROIT, Jan. 11—American Car & Foundry Co. will deliver 50 A.C.F. gas-electric double-deck coaches to the City of Detroit this month.

Dealer Quotas Fix Oakland Production

Company to Base Manufacturing on Territory Analysis Under New Policy

NEW YORK, Jan. 11—A new plan whereby the Oakland Motor Car Co., will base production on the quota of cars to be assigned to dealers, was announced today by W. R. Tracy, vice-president and general sales manager, when he addressed the annual dealer meeting in the ballroom of the Commodore Hotel.

Several factors will be taken into consideration in arriving at the yearly quota of the dealer. Past records and what are conceived to be the possibilities in his territory will form the basis of the allotment and he will be expected to take this number of cars less 20 per cent. On the year's figure the dealer will be obligated to take a percentage of his quota each month which is based on variations in the sales curve and though it does not follow the sales curve exactly it is designed to keep the flow of cars as even as the various month's variations will permit.

Mr. Tracy inspired the dealers to put forth greater efforts as a means of assisting the factory in merchandising the 200,000 cars which are scheduled by Oakland-Pontiac for 1927. He declared that 1926 production was 134,089.

W. B. Sawyer was introduced as the new sales manager of the eastern district and E. M. Lubeck as the new western district sales manager. Mr. Lubeck was formerly Chicago manager.

A. R. Glancy, president and general manager, outlined Oakland's plans. The business outlook for the coming year is very satisfactory, Alfred H. Swayne, vice-president of General Motors Corp., told the dealers. In brief remarks Alfred P. Sloan, Jr., president of General Motors Corp., thanked the dealers for the way they helped put over Oakland's program.

4-Wheel Brakes General in 18 Months, Says Willys

NEW YORK, Jan. 10—"Every car with the probable exception of Ford will be equipped with four-wheel brakes inside of the next 18 months," John N. Willys, president, Willys-Overland Co., predicted at his annual luncheon to newspaper men held at the Biltmore Hotel here today.

Mr. Willys commented on the possibilities of further mergers in the industry, saying that the survivors among manufacturers will be those who can sell in large enough quantities to utilize the capacity of their plants. The Willys-Knight and Whippet lines, he pointed out, combined with the Stearns and the new Falcon-Knight, give the Willys interests products in every competitive price group.

INDUSTRY REENTRY PLANNED BY EARL

Clarence Earl, former Earl president and Willys-Overland executive, was an interested show visitor. Mr. Earl has been out of active participation in the industry for several years but if present plans mature will make a reentry in the near future. Though engaged in the development of electric appliances over the past two years, Mr. Earl has kept in close touch with automotive developments.

He sees perhaps another year or two of abnormal competitive conditions which he believes will result in the combination of some independent companies.

Chrysler Says 1927 Another Fine Year

NEW YORK, Jan. 12—Expressing confidence that 1927 will be another fine year for general business and for the automobile industry, Walter P. Chrysler, head of the Chrysler Corp., announced at a meeting of dealers today in the Hotel Commodore that production by the company in 1926 had made a record of 170,477 cars, an increase of 24 per cent over 1925. Exports were 18,143 vehicles, an increase of 58 per cent.

Looking farther into the future, Mr. Chrysler predicted that 1936 will see 35,000,000 cars registered, and 6,000,000 cars sold annually, of which 25 per cent will be exported.

The meeting drew approximately 1000 Chrysler dealers.

Speakers besides Mr. Chrysler were J. E. Fields, vice-president in charge of sales, and Lee Anderson and T. F. MacManus of MacManus, Inc.

A.D.T. Libby Reelected

NEW YORK, Jan. 10—At the meeting of the board of governors of the Automotive Electric Association held here today, officers were elected for the coming year. A. D. T. Libby was reelected president and A. H. Bartsch and George Cole were continued as third vice-president and secretary-treasurer respectively. D. H. Kelly was elected first vice-president and J. H. McDuffie, second vice-president.

U. S. POPULATION 123,288,000 IN 1930

WASHINGTON, Jan. 12—The population of the United States in 1930 will be 123,288,000, as compared with 105,710,620 in 1920, according to an estimate by the U. S. Bureau of the Census announced here this week by the U. S. Department of Commerce.

Studebaker Ready for Record Year

Starts 1927 With New Erskine. New Production Plans and Proving Grounds

NEW YORK, Jan. 8.—About 1150 dealers attended the 75th jubilee dinner of the Studebaker Corp. of America in the grand ballroom of the Plaza Hotel last night and witnessed the unveiling of the new Erskine car.

Paul G. Hoffman, vice-president of the corporation, as toastmaster, outlined the activities of the organization for the past year and told of the extraordinary reception accorded the Erskine in the Paris and Olympia automobile shows.

He introduced J. M. Cleary, recently appointed sales manager of the corporation, who announced that the company has prepared a new course in salesmanship for its dealers, which is now being mailed out, and has created a flat-rate and piecework system which is to be supplied to all Studebaker dealers at once.

Mr. Cleary described Studebaker's new proving grounds and announced that Ralph De Palma is busy on the new speed track testing Studebaker performances.

H. S. Vance, vice-president in charge of production, said that in the last three months Studebaker had completely reorganized the production department and had prepared the factory for a heavy production of Erskine sixes during the coming year.

President A. R. Erskine said that the entire executive staff of the company is now centered at South Bend and that it is preparing for a record breaking year. He said that the new proving ground, complete with maintenance shops and an elaborate clubhouse, is now complete and had cost more than $1,000,000.

Brantingham Starts Parts Manufacture

ROCKFORD, ILL., Jan. 11—Automotive parts, foundry castings and enamelled goods are being produced now in the newly industrial products division of the Emerson-Brantingham Co., launching that long established farm machinery manufacturing concern into a new field. Officials report that market for the new lines is assured and predict big development in the industry in the future.

Two prominent distributors in Detroit and Chicago are handling the automotive department output, which has just got under way, and individual parts, drop forgings, machinings and similar articles are supplied car manufacturers from the foundry division. The gas engine division has been converted into the enamelling plant.

Automotive Steels in Better Demand

General Steel Activity Held Back, However, as Other Industries Delay

NEW YORK, Jan. 13—Automotive demand for steel took an upward turn early this week. Demand from other steel-consuming industries, however, continues light and in consequence steel company sales managers are rather reluctant to admit any marked improvement in buying. As was to be expected, automotive orders are mostly for relatively light tonnages but the number of orders has perceptibly increased.

Makers of full-finished automobile sheets and producers of cold-rolled strip steel as well as those of cold-finished steel bars are beginning to accumulate sufficient orders to bring into sight more satisfactory operating schedules than those that have prevailed heretofore. So far there has been nothing to warrant speaking of even the beginning of a buying wave, but a considerable number of automotive steel consumers who had been out of the market for a long time have placed orders, and that in itself is a most encouraging symptom.

The market continues easy. It is rumored that some non-integrated finishing mills have succeeded in securing slight concessions on their semi-finished material. Quarterly contracts for sheet bars and other semi-finished descriptions of steel are said to have been largely superseded by monthly contracts.

The steel industry's publications credit the automotive industries with a consumption in 1926 of 14.50 to 14.72 per cent of all steel produced, whereas the National Automobile Chamber of Commerce is so modest as to make its figure of "iron and steel used by automobile industry" 12 per cent. It may be remarked in this connection that the relative importance of the automotive industries as a consumer of iron foundry products or of foundry iron so far has not been brought within the scope of annual statistical reports.

Pig Iron—Better consuming interest is in evidence. The $18.50, Valley, and $20, Detroit furnace, quotations continue to apply, but news that coke-oven wages will not be reduced, as had been expected in some quarters, has acted as a prop and, at least, checked the declining tendency of the market.

Aluminum—The market is entirely devoid of fresh developments. So far there has been no perceptible quickening of interest on the part of automotive consumers. The market is fairly steady with prices unchanged.

Copper—The market is on tiptoes in expectation of consumers taking advantage of the low prices that have been in vogue of late. At the very first sign of this buying upward price changes are looked for.

Tin—Quiet prevails in the tin market here as well as in London.

Lead—Following further price dips, largely as the result of declines abroad, the market steadied a shade. Storage battery makers are out of the market for the time being.

Zinc—The market is quiet, with consumers in a hesitant mood.

16 CENTS A GALLON IOWA FUEL PEAK

DES MOINES, Jan. 10—A bill drafted at the instance of Secretary of State W. C. Ramsay, fixes 16 cents as the absolute maximum price for gasoline in Iowa and is expected to be introduced at the forthcoming session of the Iowa general assembly. As drafted, the measure provides for a basic maximum of 12 cents a gallon with provision, upon proper showing of the necessity of such increase, of increases of one to four cents over that amount at the discretion of the county boards of supervisors, who have control over the price in their respective territories. Under the measure, any taxpayer or citizen objecting to the increase may appeal to the state executive council against the price.

Low Gasoline Price Defers Coal Process

WASHINGTON, Jan. 10—Production of substitutes for motor fuels and oils by carbonization of coal will not be commercially profitable at the present comparatively low cost of gasoline, it was announced this week in a report to the U. S. Department of Commerce from A. C. Fieldner, superintendent of the Pittsburgh experimental station of the U. S. Bureau of Mines.

Perfection of certain processes for the carbonization of coal, however, may be depended upon to provide substitutes for motor fuels for use in internal combustion engines in the future, he stated. He reported that during a recent trip to Germany he found in that country a process by which motor fuel is being produced from coal at a cost of 18 cents per gallon.

See Lumber Sales on Normal Basis

Orders for Early Year Light, but Inquiries Increase—Price Trend Upward

ATLANTA, Jan. 10.—Though comparatively few orders are as yet being booked in southeastern lumber markets by automotive and body makers for the early part of this year, the inquiry has been showing a steady improvement since Christmas, and indications give promise of about a normal sale the first few months of the year.

A review of business for 1926 shows that sales were very good the first seven or eight months of the year, much better than normal in fact, but that they then began to decline and for the rest of the year were somewhat below normal, few advance orders for first quarter delivery being placed, whereas a considerable volume of this business is ordinarily placed. As a result of this, sales for the the year as a whole were only about normal.

The outlook for sales to truck body makers is particularly good for the first half of the year, and wholesalers and manufacturers express the opinion that this line will likely establish a record for sales volume, as the inquiry is very heavy for business that will develop the next few weeks.

The primary call is for thicker dimensions of white ash of the best and second best grades, with a fair call for the best grade of maple and elm. Prices have shown no changes to speak of for several weeks in these items, but the present tendency is slightly upward.

Reorganize Remo Company

HARTFORD, CONN., Jan. 10—The plant and equipment of the Remo Mfg. Co. of Meriden has been taken over by the Remo-Lite Corp., according to an announcement made by Burton C. Rogers, treasurer of the new organization which is capitalized at $500,000. The new concern will specialize on the Siko-Lite non-glare headlight bulb for motor cars and other automobile accessories.

When New Models and Important Changes Announced Since Last July 1 and Not Included in This Issue Were Described in *Automotive Industries*

Auburn	Jan. 8	Hudson	Aug. 5	Packard "6" & "8"	Aug. 12
Buick	July 29	—"Super Six"	Jan. 8	Paige	Oct. 7
Cadillac	July 29	Hupmobile	Jan. 8	—"8-85"	Jan. 8
Chandler	Aug. 22	Jewett	Sept. 2	Peerless "Std."	Aug. 19
—"Royal 8"	Aug. 19	Kissel	Jan. 8	—"90"	Oct. 7
Chevrolet	Aug. 12	Lincoln	Dec. 9	—Lt. 6	Dec. 30
	Dec. 30	Marmon "75"	Sept. 16	Pierce-Arrow "33"	Oct. 7
Chrysler "50"	Aug. 19	—"Little Marmon"	Dec. 16	Reo "Flying Cloud"	Dec. 30
"70"	Oct. 7	Moon "6-66"	Aug. 5	Rickenbacker "8"	Dec. 23
Davis "94"	Dec. 23	Nash Lt. & Adv. 6	Aug. 5	Star	Aug. 5
Dodge	Sept. 23	—Special 6	Sept. 2	Stearns "6-85"	Sept. 16
	Oct. 28		Jan. 8	—"8"	Jan. 8
DuPont	Dec. 23	Oakland	July 8	Studebaker Erskine	Oct. 7
Elcar "8-82"	Dec. 16	Oldsmobile "E"	July 15	—Erskine	Jan. 8
Essex "Super Six"	Jan. 8	Overland Whippet		Stutz	Dec. 23
Gardner "80-8"	Nov. 25	Six	Jan. 8	Velie "50"	Nov. 11

Taxes Force British to Use Small Cars

Despite Increase Registry Tax Receipts Show Decline—Truck Basis Changed

LONDON, Jan. 3 (*by mail*)—A striking illustration of how the high horsepower tax is forcing British motorists to use cars of very small piston displacement is furnished by figures of gross income from the tax on these vehicles, given in a report of the Ministry of Transport recently issued and covering the period of Dec. 1, 1925-Nov. 30, 1926. The total receipts from passenger cars (on which the tax is calculated on a horsepower basis) showed a decline from £9,437,168 to £9,054,681.

Returns of registrations in 1926 are not yet to hand but there can be no doubt that there was a considerable increase, and the only explanation of the decrease in the receipts is that British motorists are being forced by the high tax to give up the more powerful cars with a high tax rating and purchase light cars in ever increasing proportion. The total receipts from motor vehicle taxation during the period were £19,-032,682, as compared with £17,233,238 for the previous year.

Tax rates on motor vehicles in Great Britain and northern Ireland are among the highest in the world, and there has been considerable agitation on the part of the industry and the trade for a reduction in these rates. It is expected that the gain in the receipts of nearly £2,000,000 over last year will lead to a renewal of the drive for a lowering of the rates.

A new system of taxation for commercial vehicles went into effect with the beginning of the current year, but this is expected to swell receipts still further. In the case of trucks and delivery wagons the tax is now based on the weight of the empty vehicle, and it is believed that this will result in a reduction in the weight of these vehicles in the future.

The increase is even greater in the case of public passenger vehicles, for a motor bus with a capacity for 56 or more passengers will pay £120 hereafter, as compared with £84 heretofore in the metropolitan police area and £70 elsewhere. The tax receipts from trucks increased from £4,697,020 in 1924-5 to £5,228,445 in 1925-6, and the receipts from public passenger vehicles from £2,270,906 in 1924-5 to £2,373,074 in 1925-6.

Glidden Has Oil Finish

CLEVELAND, Jan. 10—The Glidden Co. laboratories have brought out a new elastic oil finish with a lacquer schedule. Automobile manufacturers have long sought an elastic oil finish that would have a varnish gloss and yet could be applied on the same schedule as nitro-cellulose lacquers.

PROPOSE HIGHWAY CANADA TO BRAZIL

WASHINGTON, Jan. 5—Connection of the nations of North and South America by a great highway from Canada to Brazil is provided in a bill introduced in the Senate (S. 5031) this week by Senator Cameron, of Arizona, following a conference with President Coolidge. The bill provides for the appointment of a commission composed of the members of the cabinet, the director general of the Pan-American Union and three members to be named by the President, to plan for the highway.

The highway would open up a vast area in Central and South America which now is connected with the outside world only by cow trails and paths impassable to automobiles, Senator Cameron pointed out. It would stimulate commerce, increase automotive traffic and lead to better relations among the countries linked by the highway.

11 Months' Exports Increase $5,000,000

WASHINGTON, Jan. 10—United States exports of passenger cars and trucks during the first 11 months of 1926 increased in value by almost $5,000,000, according to an announcement this week by the Automotive Division of the U. S. Department of Commerce. The number of units exported amounted to 279,599, with a value of $204,206,580, as compared with 269,414 units, with a value of $199,-768,779, in 1925.

The exports for 11 months of 1926 included 216,673 passenger cars, valued at $140,380,048, as compared with 219,-461, valued at $167,463,334, during the same period of 1925, and with 140,110, valued at $102,594,561, in 1924.

Trucks exported during the 11 months totaled 62,926, with a value of $43,-636,541, as compared with 49,736, valued at $32,315,395 in 1925, and 25,506, valued at $17,864,371, in 1924.

Canada Air Line to Start

QUEBEC, Jan. 11—Early in June of this year a regular airplane service between Chicoutimi, Montreal and Toronto will be inaugurated by the Canadian Transcontinental Airways & Company, a corporation which has just received its letters patent. Final arrangements are now being made between the promoters and European airplane factories for delivery of the machines necessary to operate the service. The service will be for passengers and mail and arrangements are said to provide for a special contract in this connection. The airplanes or hydroplanes, will start from Chicoutimi.

Engineers Discuss New Car Features

S. A. E. Show Dinner Brings Out Reasons for Technical Developments

NEW YORK, Jan. 11—At the second annual automobile-show dinner of the Metropolitan Section of the Society of Automotive Engineers, at the Commodore last night, representatives of various leading automobile companies, for the most part the chief engineers, gave a resume of the improvements made in their respective cars during the past year. A number of delegates to the World Motor Transport Congress were present at the dinner and representatives from Great Britain, Switzerland and Jamaica spoke briefly.

Chief Engineer E. A. De Waters of Buick Motor Co. outlined the improvements made in Buick models. H. F. Smith, engineer of Chevrolet, pointed out that the changes made from year to year are of minor importance and that the constant aim of the engineering department is to so develop the parts of the car that they can be made at lower cost. One of the noteworthy improvements made recently and to which attention was called is the chromium plating of the piston pins.

H. T. Woolson of the Chrysler Corp., spoke on the development of the four models of that company and showed some drawings illustrating the various improvements. The hydraulic brakes have been improved by the provision of a rubber cap over the brake cylinder which renders escape of the brake fluid more difficult, and a form of tubing has been developed for the brake connections which is less extensible under pressure and which therefore reduces the free travel of the pedal when the brake is applied.

Franklin Bodies Larger

E. S. Marks, chief engineer of the H. H. Franklin Mfg. Co., said the bodies of the Franklin cars had been made roomier by increasing their dimensions 2 in. in both directions; the instrument board had been moved 2 in. further forward, which gave a sense of greater roominess; the base of the gear lever had been moved forward for increased comfort; all doors had been increased 1½ in. in width; the front corner posts had been made narrower for increased vision; the engine power had been increased about 10 per cent by the substitution of a 1¼ for a 1 in. carburetor.

G. C. Mather spoke on new features of the Paige cars, dwelling particularly on the new four-speed transmission, while W. E. England outlined those of the new Stearns eight, emphasizing the reduction in the weight of the sleeves as compared with previous similar models. C. S. Crawford dealt with the Stutz, H. C. Snow with the Velie and A. J. Baker with the Willys-Overland.

Men of the Industry and What They Are Doing

Willys Makes Promotions in Sales Organization

Many changes in the sales organization of Willys-Overland, Inc., both in the home office and in the field were announced today, by L. G. Peed, general sales manager.

Leo Longfellow, who has been connected with the sales division of Willys-Overland for a number of years has been named assistant purchasing agent. The car distribution division will be in charge of C. J. Rogers, who has been promoted from chief supervisor. Frank Wiethoff, former branch manager at Pittsburgh, becomes head of the standard accounting system for dealers, which has just been established by Willys-Overland. Mr. Wiethoff will be assisted in branch accounting by W. S. Moffatt, and by H. S. Beebe in dealer development. H. D. Rue, who has spent several years in various capacities with the Ford Motor Co., is named manager of the Pittsburgh branch. Douglas M. Herrick, has been appointed head of the home office sales statistical division.

Chevrolet Makes Changes

R. H. Grant, general sales manager, Chevrolet Motor Co., announced a number of changes in the sales organization, effective Jan. 17. E. W. Fuhr, regional director of sales at St. Louis, will be transferred to the Pacific Coast zone; D. E. Ralston, regional director at Tarrytown, will succeed Mr. Fuhr at St. Louis. H. L. Horton, assistant regional director at Tarrytown, takes the place of Mr. Ralston.

R. L. Myers becomes sales manager of the New York City zone, and George Schmidt, who has held the position to be taken over by Mr. Myers, goes to Tarrytown as Mr. Horton's assistant.

A. C. F. Elects Directors

Dallas B. Pratt and F. F. Fitzpatrick were elected to membership in the directorates of the American Car & Foundry Co. and the American Car & Foundry Securities Corp. at a meeting of directors of these companies this week. Mr. Pratt will fill the vacancy caused by the death of Gerald Livingston Hoyt. Mr. Fitzpatrick is president of the American Locomotive Co.

Sloan Heads Buda Sales

L. M. Viles, president of the Buda Co., Harvey, Ill., has made known the selection of H. M. Sloan as vice-president in charge of all sales activities of the Buda Co. Mr. Sloan's former duties as treasurer have been assumed by J. S. Dempsey.

Richards Branch Manager

A direct factory branch will be opened in Salt Lake City by General Motors Truck Co., with Ben H. Richards, district representative in the inter-mountain territory, in charge.

ERSKINE GETS BIG STUDEBAKER CAKE

A mammoth birthday cake weighing 300 lb. was presented to A. R. Erskine, the president of the Studebaker Corp. in celebration of the corporation's 75th anniversary at the Studebaker banquet at the Hotel Plaza just previous to the opening of the New York show.

After Mr. Erskine had made the first slice the cake was distributed to 200 Studebaker dealers and officials who had gathered to witness the unveiling of the Erskine Six.

Wood on Olds Staff

John G. Wood has been added as executive engineer to the staff of Chief Engineer H. C. M. Stevens, of the Olds Motor Works, it is announced by President I. J. Reuter. Mr. Wood attended Leland Stanford and Purdue Universities. He is a member of the Society of Automotive Engineers and his home is in Indianapolis. He served with National Motors, Empire Motor Car Co., Remy Electric Co., Midwest Engine Co.

Devore Nash Export Man

After completing a thorough study of Nash plants, products and policies, C. C. Devore has sailed for Europe as a special representative of the Nash Motors Co. His first stop will be Portugal and after that he will visit practically every country in Europe and later give his attention to South Africa, East Africa, India, Burma and Ceylon. He is experienced in the export field.

W. J. McIntyre Appointed

Chassis Lubricating Co., Inc., Rahway, N. J., has added to its sales staff William J. McIntyre, formerly with the Splitdorf Mfg. Co. and Stewart-Warner Corp. Mr. McIntyre will cover manufacturers in the Detroit-Toledo district. His offices will be at 4-159 General Motors Bldg., Detroit. William N. Hallanger will continue to serve fleet owners and the distributing trade.

Stilley Rejoins Link-Belt

Edgar Stilley has renewed his affiliation with the replacement timing chain division of the Link-Belt Co., Chicago. Mr. Stilley is popular and will be utilized in establishing closer contact with distributors east of Pittsburgh.

Langenberg Joins Climax

Climax Molybdenum Co., New York, announces that Dr. F. C. Langenberg, director of laboratories of the Watertown Arsenal, has become associated with it as head of its research department.

General Motors Export Names 3 New Directors

W. T. Whalen, E. W. Smith and John H. Voorhees have been elected directors of General Motors Export Co., W. D. Sullivan and N. C. Tuxbury have been made vice-presidents, and R. M. Hebden has been made assistant treasurer. Mr. Whalen, who has been acting general manager, has been made general manager and will serve jointly with Mr. Rumely.

G. S. Frank, formerly with Ford Motor Co. in South America, has joined the general manufacturing division. He will sail for England this month to assume his first duties at General Motors, Ltd. A. B. Paddock has been appointed assistant to the general sales manager. M. Sawyer, formerly with the Wile Corp., has joined General Motors Export and has been assigned to the west coast of Africa.

Pennington Promoted

W. W. Pennington has been designated sales manager of the manufacturers' division of the U. S. Light & Heat Corp. with headquarters in Detroit, according to the announcement of Vice-President J. A. White. For a number of years past Mr. Pennington has been manager of the Detroit branch. He will continue to supervise the USL service sales organization in the Detroit district.

Open Chicago Sales Office

A sales office for industrial engineering equipment has been opened at 332 S. La Salle St., Chicago, by James L. Mayer and Frederick E. Oswald, who now represent the Saginaw Stamping & Tool Co., and the Dings Magnetic Separator Co.

Dealers to Hear Jordan

Edward S. Jordan, president of Jordan Motor Car Co., will be the principal speaker at the seventh annual pre-show sales meeting of the Chicago Automobile Trades Association. This event will be held Jan. 27 in the Gold Room of the Congress Hotel.

Amedee Bollee

PARIS, Dec. 21 (*by mail*)—Amedee Bollee, pioneer automobile manufacturer, died this week in his native town of Le Mans, aged 60. The father of Amedee Bollee, a bell founder at Le Mans, built some of the first steam automobiles to operate in France, among them being the "Obeissante," a machine produced in 1872. Amedee Bollee was prolific as an automobile inventor, but never produced any great number of automobiles. His brother, Leon Bollee, who died a few years ago, founded the Leon Bollee Automobile Co. which a year ago passed into the hands of the English Morris company.

Noted Engineers Join Studebaker

W. S. James and Ralph De Palma Among Group Directing Activity

SOUTH BEND, Jan. 12—Announcement is made this week by H. S. Vance, vice-president of the Studebaker Corp. of America, of the completion of changes in the engineering staff of the corporation. The changes have been made at a time when Studebaker has consolidated its engineering forces at South Bend and at its new proving ground near here.

The list of appointments is headed by D. G. Roos, news of whose resignation from Marmon and affiliation with Studebaker became known recently. The appointment of William S. James to head the research department of the company is now confirmed. Mr. James was chief of the automotive power plant division of the U. S. Bureau of Standards from 1922 to 1924. For the past two years he has been a technologist with one of the larger oil companies.

Assisting Mr. James in the experimental and research laboratories and on the proving ground are John A. C. Warner, recently manager of the research and meetings and sections departments of the Society of Automotive Engineers; R. F. Kohr, recently consultant supervising aircraft engine work for the Bureau of Aeronautics, U. S. Navy; T. S. Slight, Jr., formerly of the automotive power plants section of the Bureau of Standards; Stanwood S. Sparrow, chief of that section for two years, and M. A. Thorne, also a Bureau of Standards man, who has been placed in charge of the proving ground work.

Dr. E. C. Newcomb, technical advisor to the president, will act in an advisory capacity, as will J. I. Muncy, long with the Studebaker corporation.

Ralph DePalma, well known racing driver, will be closely allied with the research and experimental engineers. K. M. Wise will be in charge of chassis design of the standard and big six. Leon A. Chaminade will be executive engineer in charge of the Erskine Six division; J. H. Bourgnon will be chief body engineer; C. W. Link, director of body design, and Paul E. Breneman, assistant chief body engineer. R. H. Dietrich will be consulting engineer on body design. Karl Herrman will contact on service and production problems.

F. B. Walker is Appointed Franklin Sales Manager

SYRACUSE, Jan. 10—Fred B. Walker, Dodge Brothers dealer in Tacoma, Wash., has been appointed general sales manager of the H. H. Franklin Mfg. Co., manufacturer of the Franklin automobile. The position was created after the resignation of S. E. Ackerman, former sales manager, who resigned to enter the retail field.

Mr. Walker, before going to Tacoma, was assistant general sales manager of Dodge Brothers, Inc., and had also served as factory service manager and in other sales positions. He is widely known in both the manufacturing and retailing divisions of the industry.

He has been engaged in the automotive field for many years, almost exclusively in the distributing field, where he has gained recognition as a leader.

14 Companies Seek Navy Plane Award

WASHINGTON, Jan. 10—Fourteen bids and designs for a standard type of training plane for the Navy have been submitted by manufacturers, it was announced by the Navy Department. The bidders were as follows:

Curtiss Aeroplane & Motor Corp., Thomas Morse Aircraft Corp., Aerial Service Corp., Kentucky Aircraft Corp., Boening Airplane Co., Consolidated Aircraft Corp., Sikorsky Mfg. Corp., G. Elias & Bros., Inc., Huff-Daland Airplanes, Inc., Buhl Verville Aircraft Co., Glenn L. Martin Co., Eberhart Aeroplane & Motor Co., Charles Ward Hall, Inc., and the Douglas Co.

The award will be based on performance, maneuverability, the ratio of high speed to low speed, and the rate of climb to 3000 ft. The award for the best type of plane, combining these four features, is regarded as being an important one, for to the company securing the award the Navy Department will give its entire business for this type of plane which will amount to several million dollars annually.

Timken Bearing Makes First Railway Shipment

CANTON, Jan. 6—First carload of Timken railroad roller bearings went out Thursday from the factories of the Timken Roller Bearing Co. to the Chicago, Milwaukee & St. Paul Railway Co. Other large orders for railroad bearings are expected to be shipped within a short time, officials said.

Business outlook for 1927 is better than in 1926, officials said this week. January operations will exceed those in November and December, it is said. Work is being rushed on the new factory additions.

Goodyear Has New Tire

AKRON, Jan. 10—A new automobile tire, heralded as "the greatest achievement in the tire industry since the cord tire," has been announced by the Goodyear Tire & Rubber Co. officials. The tire is of the balloon type and its developers claim for it greater mileage, better traction and increased safety with regard to skidding. The design, incorporating an unusually flat tread which extends far up the side walls of the casing and furnishes greater protection from external wear, is also said to reduce internal wear to a minimum.

Financial Notes

Martin Parry Corp. for the quarter ended Nov. 30, 1926, reports net sales of $1,207,549 and net operating profit of $91,515. Net earnings for subsidiary companies, discount on purchases and other income amounted to $71,944. After all deductions, including Federal income taxes, net profit for the quarter was $139,520.

Nash Motors common stock was established on a $4 annual dividend basis when directors declared a quarterly payment of $1 payable Feb. 1 to stockholders of record Jan. 20. Since the company paid its 900 per cent stock dividend on Feb. 19, 1926, the new shares have been receiving regular cash dividends at the rate of $2 annually, with extras of 50 cents a share paid on Aug. 2 and Nov. 1, 1926.

Glidden Co. has issued its pamphlet report for year ended Oct. 31, 1926, showing net profit of $1,861,945 after interest, depreciation and Federal taxes, equivalent after prior preference dividends, to $3.41 a share earned on 400,000 no par shares of common stock. This compares with $2,209,757, or $4.27 a share in previous year.

U. S. Rubber Co. declared the first regular quarterly dividend of $2 on first preferred stock, payable Feb. 15 to stock of record Jan. 20.

Syracuse Factories Increase Schedules

SYRACUSE, Jan. 10—Officials of gear manufacturing plants here have announced increased schedules for 1927. They have started the year with the same or increased output, believed an indication of the confidence of the motor car industry in the spring demand for new machines.

The New Process Gear Co. will this month turn out more than 20,000 gears for Star cars, compared with approximately 2000 for last month. It is manufacturing differentials and gears in increasing quantities for Willys-Overland, Chrysler, Flint and other companies.

Officials of the Brown-Lipe-Chapin division of the General Motors announced opening of the factory with the same force of employees as when it closed before Christmas.

The Brown-Lipe Gear Co., manufacturing differentials and gears for motor trucks, reports a less seasonal change than plants in the passenger car field.

Generally local gear companies are looking forward to 1927 as the most prosperous in their history.

Dodge Adds New Unit

DETROIT, Jan. 11—Dodge Brothers, Inc., will complete a new building by March 15 which will add 560,000 sq. ft. of manufacturing space. The building will be surrounded by a one mile concrete test track, with roadway 18 ft. wide on the straightaways and 23 ft. wide at the turns to provide greater capacity for road testing of cars.

Sees Bus Operation Near Stabilization

WASHINGTON, Jan. 6—The motor bus industry, with $500,000,000 invested in 75,000 motor vehicles, has begun 1927 as a well-balanced, gigantic and highly business-like agency, comparable in operating efficiency to the steam and electric railway systems, it was stated here this week in a review by the Motor Bus Division of the American Automobile Association.

The review stresses the tendency toward consolidation of bus lines, citing combinations of companies, several of which involved assets ranging from $1,000,000 to $10,000,000 in 1926, as indications that stabilization and systematic operation in perfected form soon will be here.

Total passenger miles of buses in 1926 was 15,200,000,000, with a revenue of $608,000,000, according to the review. The average revenue per passenger mile was four cents and per bus mile 32 cents, it was estimated. There were 32,000 buses in use in intrastate commerce, 2000 in interstate business, 6100 by electric railways and subsidiaries and 500 by steam railroads and subsidiaries. These 40,000 vehicles are valued at $241,000,000. In addition there are 35,000 buses used by hotels, sightseeing companies, touring agencies, railway terminals and in school and labor transportation.

Charlotte Speedway Fails

CHARLOTTE, N. C., Jan. 12—The Charlotte Speedway, Inc., filed a voluntary bankruptcy petition with the clerk of the United States district court here this week. Liabilities were listed at $210,599, of which $147,000 were in secured claims, and assets at $56,874. The speedway was opened for its first race in the fall of 1924.

Postal Receipts Increase

WASHINGTON, Jan. 11—An indication of general business prosperity is contained in the announcement by Postmaster General New this week that postal receipts at 50 selected cities for December, 1926, show an increase of $1,625,806 over those for December, 1925, the total last month having been $40,381,558.

Coming Feature Issues of Chilton Class Journal Publications

Jan. 20—Commercial Car Journal—New York Show Issue.

Jan. 27—Motor Age—Chicago Show Issue.

Feb. 19—Automotive Industries—9th Annual Statistical Issue.

Imperial Airways Starts Near East Air Service

NEW YORK, Jan. 10—An important new air service is to be inaugurated this week between Cairo, Egypt, and Karachi, India. The service will be conducted by Imperial Airways, Ltd., under contract with the British government, whereby the government will pay the operating company a subsidy of £96,000 per year for five years. Orders have been placed for five three-engined planes for this service, and the first of these machines to be completed left for Cairo Dec. 18.

The machine is a de Havilland DH-66 and is fitted with three Bristol Jupiter engines. For the first three months a fortnightly service will be maintained as far as Basra. The journey from Cairo to Karachi will occupy four days and during the whole of the trip the machines will be in communication with wireless and meteorological stations which have been specially established for the purpose. It is hoped later to extend the line from Karachi, on the western coast of India, to Bombay, and thence by flying boats to Singapore.

Develop Synthetic Fuel

WASHINGTON, Jan. 11—French chemists claim the discovery of a process of making synthetic petroleum possessing all the qualities of crude oil extracted from the earth, according to a report issued at Washington this week by the U. S. Department of Commerce. The report covers French efforts to make that country independent of foreign petroleum through development of motor vehicles operated by use of wood and charcoal, alcohol and other fuels.

Bay State Insurance Develops Problems

BOSTON, Jan. 10—The Massachusetts Compulsory Insurance Law went into effect Jan. 1 and from now on its working will be watched with much interest. During the past month there have been a number of hearings at which the appeal board took the attitude that the insurance companies that were turning down applicants must give them policies.

One of the interesting points brought out was the attitude of insurance companies toward the drive-yourself car companies. In several places the applicants for insurance were turned down. But the appeal board decided that policies must be given the companies. So appeals have been taken to the courts.

Motor Vehicle Registrar Goodwin is quoted as stating that all such companies should be put out of business and he is reported to have had a bill drawn to present to the Legislature to wipe them out of existence. However, judging from the recent report of the Supreme Court on his efforts to legislate horns, it is doubtful if the Legislature will follow his advice.

Meanwhile, registrations have fallen off because a lot of people will not insure until April and thereby save first quarter premiums. The insurance commissioner has allowed companies to provide insurance on time payments the same as motor cars are bought and this is helping somewhat to relieve opposition.

Determines Truck Hazard

NEW YORK, Jan. 11—The National Board of Fire Underwriters in its review of activities in its laboratories during the last year reports that much progress has been made in the inspection and classification of passenger automobiles as to fire hazard, and that the service has now been extended to the examination and listing of commercial automobiles and trucks. This activity has been stimulated, the report says, by recognition of the insurance interests and it is expected that it will continue to expand until the list will include many, if not most, of the commercial cars.

Calendar of Coming Events

SHOWS

Cairo .....Feb. 15-March 15
First International Motor Show.

Chicago .....Jan. 29-Feb. 5
National, Coliseum, National Automobile Chamber of Commerce, including special Shop Equipment Exhibit.

Chicago .....Jan. 29-Feb. 5
Annual Salon, Hotel Drake.

Copenhagen .....Feb. 18-27
Danish Automobile Exposition.

Geneva .....March 4-13
Palais des Expositions.

Los Angeles .....Feb. 12-19
Annual Salon, Hotel Biltmore.

CONVENTIONS

Automotive Electric Association, Electrical Service Meeting, Congress Hotel, Chicago .....Feb. 1-2

National Foreign Trade Council, Detroit .....May 25-27

National Safety Council, Mid-West Safety Congress, Hotel La Salle, Chicago .....Feb. 21

S. A. E.

Dayton, Jan. 20—Some Thoughts on the Use of Our Highways—Dr. H. C. Dickinson.

Detroit, Jan. 25-28—Annual Meeting.

Detroit, Jan. 28—Carnival.

French Lick Springs, Ind., May 25-28—Summer Meeting.

New England, Jan. 18—Gas-Electric Buses—M. E. Toepel.

RACES

Altoona, Pa. .....June 11
Atlantic City .....April 30
Charlotte, N. C. .....May 9
Fresno, Cal. .....April 21
Indianapolis .....May 30
Los Angeles .....Feb. 22
Los Angeles .....April 10
Salem, N. H. .....June 25